

The Boston Medical and Surgical Journal

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The Massachusetts Medical Society.

DIPHtheria PREVENTION IN BOSTON.

December 5 a special meeting of the Suffolk District Medical Society was held at the Medical Library in the interests of the Schick test and toxin-antitoxin immunization against diphtheria. Previous to the addresses the Schick test and Schick reactions were demonstrated by Dr. John A. Cecconi, Epidemiologist of the Boston Health Department.

Dr. FRANCIS X. MAHONEY, Health Commissioner of Boston.

Mr. Chairman, Ladies and Gentlemen: I want to thank you for the privilege of addressing this meeting tonight in relation to the work being done by the Health Department in the control and eradication of diphtheria in Boston.

There is not so much interest being taken in the control of diphtheria now as there was previous to 1894 when the annual number of deaths from the disease ranged from 400 to 850.

With the introduction of diphtheria antitoxin, 1894, tremendous strides were made in the treatment and control of diphtheria and the number of deaths steadily decreased year by year until it reached 120, its lowest ebb, in 1912. From then until today the line on the chart remains almost on a level, and the average number of deaths for the past ten years has been 185, the approximate average number of cases ranging from 2500 to 2900. In looking at this chart one would come to the conclusion that we have reached

our limit by the use of diphtheria antitoxin. But I think we will agree that if every case of diphtheria was to receive the proper amount of antitoxin at the earliest possible moment after the onset of the disease that we might be able to control it and render the number of deaths almost nil. But right there you come up against one of the great problems of the public health officer,—the early detection and recognition of the disease and quick despatch in getting it under treatment.

There are a great many cases of diphtheria which do not come to the attention of a physician until the patient has been sick for four or five or six days and in such condition that the benefits of diphtheria antitoxin are lost. There are many cases in which the administration of the antitoxin is delayed waiting for the verification of the diagnosis from the laboratory, a practice that should never be followed because any case which is suspicious enough to warrant culturing should receive antitoxin immediately. And then there are those mild unrecognized cases which are treated at home or given home remedies and pass on to return some time later with a heart lesion or a kidney lesion or with some impaired condition of the nervous system which renders the patient unfit for many of the duties of life. This was the picture that confronted me and still confronts me as Health Commissioner of Boston.

The question arose in my mind, What can I do to improve conditions? The answer, it seemed to me, was staring me in the face, namely, the Schick Test for the detection of susceptibles and

the toxin-antitoxin immunization. The leading medical scientists and bacteriologists of the country have proven the value of this method not in a series of hundreds or thousands, but it has reached hundreds of thousands.

I am not a novice in carrying on a campaign for the introduction of any new methods for the treatment or control of any disease. Over eight years' practical experience as Health Commissioner of this city taught me the obstacles which I would have to overcome and the forces which I would have to meet, both organized and unorganized—one of which I may mention, namely, the Medical Liberty League, which through lectures, posters, pamphlets, fliers and circulars, seeks to inhibit all our efforts. It was a tremendous job to undertake with the forces at my disposal, and caused me a great deal of concern. But the fear that any untoward accident might reflect against the work of the Department concerned me less than that the good work accomplished already by the Schick-toxin-antitoxin method might be discredited. Nevertheless I felt that I was in duty bound to proceed to give every child in this city every chance to live that it was within my power to give them. I called a meeting of my advisory council and laid my plans for the institution of a campaign for the control of diphtheria before them. And after two or more meetings, and a full discussion, they unanimously voted that the work should be carried on. I decided that it was to be a campaign of education, not only for the public, but also for the medical profession as a whole. Because this is a job for the entire medical profession! And the future control of diphtheria and the responsibility for the lives of the children are in the hands of the medical profession as a whole, especially those who have charge of the care of children!

In looking over my field I immediately ruled out the public schools because they are adequately cared for by their own medical director, and chose all the institutions and the parochial schools for the field in which to work. Clinics were established in the out-patient departments of the various hospitals and the work started. After these have been finished I intend to start in the field in which I am most interested and which is most important, namely, the children from six months of age to six years of age—pre-school period. I placed Dr. John A. Ceconi, epidemiologist, in charge of this work, at first alone. Then I gave him one man, then two men, until now he has six men, with nurses, and has from the beginning organized and carried on the work. I feel proud of the work done by these men and nurses, and I think when you consider that in over 100,000 injections given without one single untoward result of any kind you will agree with me that I have reason to be proud. And also it speaks well for the great care and sustained interest manifested by this corps. I again want to emphatically say that

this work is the work of the medical profession as a whole. They should familiarize themselves with the methods and become experts in the administration of the procedure, which is not hard to accomplish. Our clinics are always at your service for your instruction.

All the work done will be presented to you this evening for your information and study, and if I succeed in obtaining your approbation I will feel that I have accomplished something worth while.

Again, Mr. Chairman and Ladies and Gentlemen, I thank you.

Dr. BENJAMIN WHITE, Director of the State Antitoxin Laboratory, then gave a brief account of the theory of the Schick test and toxin-antitoxin immunization. An important point brought out was the recent discovery by Dr. Park of New York that immunization can be as well produced by injecting doses of toxin-antitoxin containing 1/10 L + dose of diphtheria toxin as by the 3 L+ doses. This, of course, greatly reduces the amount of foreign protein introduced, and has been found to lessen the reaction caused by the injections. Toxin-antitoxin of this dosage will soon be available for those who prefer to use it.

Following Dr. White, Dr. Richard M. Smith spoke on diphtheria prevention in private practice.

Dr. SMITH said:

It was formerly possible for the public health official and the private physician to work separately in fairly well defined fields. They came in contact with one another only occasionally and in connection with only a few conditions. This separation is no longer possible, due very largely to the advance of scientific medicine. The progress of public health and private practice are now intimately connected, and whether either group wishes it or not this intimacy is bound to increase as time goes on. The public health official cannot do his work completely or well without the aid of the private physician and the private physician cannot render the best service to his patient without considering the community aspects of medicine, i.e., without practicing prevention. This intimate contact is nowhere so close as in work with children, since so much of the problem of child life is inseparable from environmental conditions. Scientific investigation and practical experience indicate that childhood is the period of life in which the greatest amount of good can be accomplished by preventive measures. In children, after early infancy most of the illness and deaths are due to accidents, disturbances of the digestive tract and infections.

Of the severe infections diphtheria is one of the worst. Before the days of antitoxin the yearly death rate in Massachusetts was 74.4 per 100,000 of population. With the use of antitoxin since 1893 there has been a reduction in this

death rate until for the year 1921 it was 15.5 per 100,000 of population in Massachusetts and 18.4 per 100,000 in Boston. At present there are between 150,000 to 200,000 cases of diphtheria in the United States and from 2000 to 3000 cases in Boston each year. Taking the country over, about one case out of every ten dies. The annual deaths in Boston for the last few years have averaged between 175 and 185. One has to bear in mind that in addition to the actual deaths from the disease about 18 per cent. of the cases have some residual paralysis—temporary or permanent.

For the last five or six years there has been practically no reduction either in the number of cases or in the deaths, so that if a reduction in either cases or deaths is to occur, it is obvious that some method of attack other than these now in general use must be found. It is essential to employ some procedure which will prevent the disease. Antitoxin as a preventive measure has certain definite limitations. It confers immunity against diphtheria which is effective very shortly after the antitoxin is given. It should be used for persons who have been exposed to the disease and who are known to be susceptible, unless careful supervision can be given to detect infection and institute early treatment. But the immunity conferred by antitoxin is short-lived, usually lasting only from two to four weeks following the first inoculation and only a week or ten days following a second inoculation. In the use of antitoxin one must bear in mind also the possible danger of anaphylaxis in people who are susceptible to horse serum. Antitoxin does not offer the means of eradicating diphtheria.

Experience in dealing with smallpox and with typhoid fever has demonstrated that through active immunization it is possible to reduce the incidence of infection to such a degree that the disease may almost disappear from the community. For 25 years studies have been carried on and experiments conducted, mostly on animals, to determine the possibility of active immunization against diphtheria. For 10 years toxin-antitoxin has been in practical use in human beings. A group of 10,000 children who have been immunized by this method have been under observation by Park in New York City for from three to five years. Sufficient information and experience are now available so that one can speak with assurance concerning the results.

The first definite statement that can be made concerning the employment of toxin-antitoxin as a means of immunization against diphtheria is that if properly prepared toxin-antitoxin is used with the right technic no serious immediate or late effects will follow. This statement is of primary importance, because in the application of any new measure it is essential that we can assure the patient that no harm will result. We can do this with reference to toxin-antitoxin immunization with absolute certainty.

Park reports that three months after the first inoculation of toxin-antitoxin, given according to the method which will be described by others here tonight, 80 per cent. of the children had become immune to diphtheria, and that 50 per cent. of the remainder were immune within a year. Those who were not immune after the first series of inoculations were rendered so by a second series of injections. Ninety-six per cent. of those children who gave a negative Schick test after the inoculations continued to show a negative reaction for periods of time varying from two to five years. No case of clinical diphtheria developed in any child who had had three inoculations of toxin-antitoxin. A study of the morbidity and mortality rate in New York City for the last three years shows that there has been an actual decrease in the number of cases and of deaths from diphtheria. Three years ago the death rate in New York City from diphtheria was 21 per 100,000 of population; this year it was 16 per 100,000 of population, a reduction of 25 per cent. The morbidity has been reduced 15 per cent. during this same period of time.

The second definite statement which we can make is that toxin-antitoxin, if used in accordance with approved methods, will protect the individual against diphtheria.

There are certain facts with reference to diphtheria which it is well to bear in mind. In the first place diphtheria is a disease of early childhood, *i.e.*, the great majority of the cases occur before children go to school. Park's figures given in the table below, of the percentages of positive reactions from the application of the Schick test, show that it is during this same period of life that there is the greatest susceptibility to infection.

Under three months	15%
Three to six months	30%
Six months to one year	60%
One to two years	70%
Two to three years	60%
Three to five years	40%
Five to ten years	30%
Ten to twenty years	20%
Over twenty years	12%

Similar investigations of other men correspond closely with these figures. A study of the deaths from diphtheria shows that it is in this early period of childhood that the disease is most fatal. In 1000 deaths from diphtheria in Massachusetts studied by the State Department of Public Health 65 per cent. occurred in children under five years of age. In Boston 60 per cent. of the deaths occur under five years of age, and in the last 10 years 10 per cent. occurred in the first year. It is also well known that cases of laryngeal diphtheria under three years of age are particularly severe. It is obvious then if any marked reduction in the mortality or morbidity of diphtheria is to take place it must

occur by a reduction of the number of cases and deaths under five years of age.

Park calls attention to three important variations in susceptibility to diphtheria as shown by a study of the positive reactions to the Schick test. First, racial variation. This is quite in line with the results of the study of immunity in other infectious disease. We know that certain races are particularly susceptible to certain infections and that other races are peculiarly resistant. Second, family variation. This also is in accord with well recognized practical experience. Third, group variation. The portions of the community which are less frequently exposed to infection from diphtheria show the highest percentage of susceptible individuals. This also agrees with general immunological theory and experience.

My own results with the Schick test and toxin-antitoxin immunization do not add any new facts to our present knowledge, but are in accord with previous observations. All the children who were naturally immune to the disease, *i.e.*, who gave a negative Schick test, were over six years of age. There was one exception in a child four and one-half years old.

With these facts in mind, what is the duty of the practicing physician with reference to diphtheria?

1. He should give antitoxin as a therapeutic measure to every patient ill with diphtheria. This should be given early in the disease. The dosage and method of administration should be chosen according to the indications of the individual case and with proper safeguards against possible anaphylaxis.

2. He should do a Schick test on every individual who has been exposed to diphtheria and who has not been immunized against infection. If the test is positive that person should be considered as one who may contract the disease and should be immunized by the administration of antitoxin or should be observed with the greatest care for the appearance of infection.

3. He should give toxin-antitoxin to every child between the ages of six months and six years to immunize the child against diphtheria. At the expiration of six months a Schick test should be done and if the test is positive further injections of toxin-antitoxin should be given until a negative Schick test has been obtained.

4. He should apply the Schick test to every child over six years of age. If the test is positive, he should immunize that child as in the case of a child under six years of age.

5. He should assist the public health officials in any way possible in their efforts to extend the knowledge of diphtheria in the community and in the application of the Schick test and of toxin-antitoxin immunization to large groups of children.

If immunization can be successfully applied to all susceptible children, it is not unreasonable to believe that within a short space of time diphtheria may be as rare a disease as smallpox.

DR. JOHN A. CECONI, Epidemiologist of the Boston Health Department.

Mr. President and Fellows of the Suffolk District Medical Society: The pleasure of addressing you this evening devolves upon me by reason of the fact that I happen to be in charge of the Schick campaign now being conducted by the Boston Health Department. It is my understanding that the scope of this paper shall be limited strictly to a report of the progress of the work in Boston, and with this in mind the writer will refrain from any discussion of the statistical deductions to be made from the results obtained to date. First, because time forbids, and second, because this will be well taken care of in a progressive, statistical report following this paper by Dr. Paul Eaton of the U. S. Public Health Service, to whose assistance in the compilation of the records the writer feels a great sense of obligation.

The Boston Health Department takes no pride in the fact that it was not among the first to undertake this most beneficent procedure for the common health, but in fairness it may be said it was not the last.—The facts are briefly these:

Moved by the successful results obtained by the Schick testing and active immunization of children this department was stimulated to make an intensive study of the technique used in this preventive measure for the control and eradication of diphtheria with a view to adopting a similar procedure.

Such an intent and such a study was at that time capable of but one objective—this was the clinic of Dr. Zingher of the New York Department of Health. To him, therefore, an agent was sent to receive such courtesy and such information as can be exceeded at no time.

I wish to take advantage of this opportunity, since I was the agent, to express my appreciation, for not only the courtesy and the teaching, but also for the enthusiasm for this work, with which I was then inspired.

Briefly then:—In May of this year the work was begun. Conferences were held with the heads of various institutions which could furnish suitable subjects for the test. At these conferences the value of the test and of the immunization were minutely explained. Appropriate literature and consent slips were given to the parents of the children in these institutions, and on May 6th the activities started.

The reason for this departure from the ordinary method of beginning with the children in the public schools is that in Boston the school physicians are under the direction of the school committee, with a medical director of their own, and not under the jurisdiction of the Health Department. A small beginning was made by the school physicians, one of whom, Dr. Solomon Rubin, tested about 1000 children, and immunized about 500 of the positive reactors. This was done in 1921 and 1922. That this work was well done there can be no question, but we do not know that any of these

500 injected cases have been Re-Schicked as yet.

Naturally our beginnings were on a small scale, but the numbers have increased in a very gratifying manner. The Schick staff, which at first consisted of one physician and a nurse, now has a personnel of fifteen,—8 physicians and 7 nurses.

Our gross figures to date show that we have tested 26,205, and out of this number we have read 24,458 or 93.3 per cent., the difference being the absentees. The reactions were distributed as follows:—Positives 12,911, or 52.7 per cent., Negatives 11,545, or 47.2 per cent. Of these 12,911 Positives, 1,431 or 11.1 per cent. showed a protein reaction, or in other words the positive combined reactors; and of the Negatives 3,399 or 29.4 per cent. showed the protein reaction, which make the so-called Pseudo reactors; this gives the following deductions:—Out of the 24,458 that were read 12,911, or 52.7 per cent. were susceptible, and 11,545, or 47.2 per cent. were immune, while 4,830, or 19.7 per cent. showed a definite protein sensitiveness.

A completed series of finished cases show the following figures:—Tests 20,713—Readings 19,148 or 92.4 per cent. Of these 9,983 were positive reactors—7,013 or 70.2 per cent. have received the triple injections of T.A.T. mixture, which is the usual number given to produce complete immunity.

A summary of 5,492 incompleated cases show the following figures: Tests 5,491:— Readings 5,310; Positives 2,928; Negatives 2,377; 2,895 or 98.8 per cent. have received their first injection, and 2,476 or 84.6 per cent. two injections.

We do not count these as immunized, but inasmuch as authorities believe that frequently two injections and occasionally one injection immunizes, probably we have even now produced immunity in a larger number of children than our figures show. This group of 5,492 have been tested only within the last two weeks. The necessary time for the completion of the cases will not elapse for two weeks more, at the expiration of which time we are hopeful of accomplishing a higher percentage of injections than noted above.

As in any public health measure, we took into consideration the psychology of the public, especially in regard to any dangers, real or imaginary. The skin punctures necessary for the test and for the subsequent immunization are surgical procedures, and the danger of infection must not be overlooked, but eliminated as far as possible. As you may imagine, this gave us some anxiety at first, and for a time we were somewhat at a loss to determine what technique would give us the greatest *a priori* safety. The following technique seemed to have given satisfaction in New York, namely:—the boiling of the needles and syringes before beginning; the cleansing of the arms with 50 per cent. alcohol and a simple wiping of the

needle on a pledget of cotton saturated with ethyl alcohol between injections.

The writer does not feel that this is the time or place to enter into any discussion as to the relative merits of the above technique as compared with that of other authorities, but feels that all other things being equal, lack of delay and promptitude of execution are factors of great psychological, as well as practical importance in the handling of large numbers of individuals.

Manhattan's record of nearly 500,000 injections without a single infection would seem to bear out this observation, that their technique is quite sufficiently scrupulous, entirely adequate, and it is surely time-saving. The Boston Health Department is wishful to offer in addition nearly 100,000 more skin injections with the same results, as a suitable control, to the single needle technique. However, nearly 20 years' experience in what many are pleased to call hypercritical Boston, convinced me of the desirability of furnishing some apparently obvious means of sterilization. With this end in view the Manhattan technic is followed entirely, with the addition of a rapid passing of the point of the needle through the flame of an alcohol lamp, it having been determined primarily that such a procedure does not affect the efficacy of the toxin.

Indeed, such a well known authority as Dr. Place, physician in chief to the contagious disease department of the Boston City Hospital, whose experience is unlimited and whose judgment is greatly respected, vouches for the fact that this process in no way impairs the virtue of the toxin.

The determination of the site of injection of the Schick and control tests still seems to be a somewhat mooted question. It is sufficient to say that those who have the largest experience in the practical administration of the Schick and its control chose the flexor surface of the forearm, while those who prefer to theorize seem to elect other locations such as the flexor surface of the wrist, etc.

We select the flexor surface of the forearm for the injection about one inch below the bend of the elbow. This area is somewhat higher than the usual site, but it has seemed to us more desirable to elect this point, as in this area the skin is more pliable and more suitable for an intra-dermal application. This seems to be especially marked in the fat subject.

You will note that since the work began in May, the usual interval has not elapsed to allow for our Re-Schicking, but in order to investigate the rapidity with which immunity is produced I re-Schicked in November at four and a half months 35 children who in Bay were Schick Positive Re-actors, and had received their 3 T.A.T. injections, with the following results:—One of these formerly giving the Positive Combined Re-action, on Re-Schicking gives the Pseudo Re-action, showing that while she has

developed an immunity to Diphtheria she still retains her protein sensitiveness; Three have changed from strong Positive Re-actors to mild or what we call plus minus; and 31 who were Positive Re-actors in May show a negative reaction now. This shows an immunity produced in over 90 per cent. at the end of four months and one half.

To those still remaining susceptible two more injections of T.A.T. were given and now at the end of the full six months, on another re-test, the Schiek shows that they have produced their immunity. This shows a total of 100 per cent. immunizations in 35 children.

Last week we re-Schicked another institution in which last May there were 226 positive Schiek Re-actors. The readings yesterday, December 4th, showed the following: Out of 226 positive Re-actors in May, 1922, 212 are now negative, or in other words, 93.8 per cent. immunity produced, but inasmuch as 8 of these received less than the full quota of injections, it seems possible that the percentage of immunity might still be higher if the triple T.A.T. injections were given.

A summary of the Re-Schicking to date shows the following figures: Re-Schieks 261; Positives, 14; total immunity produced by active immunization of T.A.T., 6 months from the first injection, 96.9 per cent.

We would be very glad to give Dr. White the lot numbers of the T.A.T. used in the production of this immunity, if he desires them.

In connection with this work, and because of the idea that perhaps the Schiek Test and the T.A.T. immunization might not be as efficacious as at first hoped in the eradication or control of diphtheria, for the reason that immunizing a person does not prevent his being a carrier,—and this idea is voiced in an article by Dr. James Gordon Cummings, in the *J. A. M. A.*, March 4, 1922, in which the argument was advanced that immunization might even increase the number of carriers,—it occurred to me to test this matter, as well as the frequency of the carrier state by culturing at the time the readings were made and before the injection, of T. A. T. a number of those giving positive reactions, in the hope of being able to culture the same individuals six months later, namely;—on the occasion of the Re-Schicking, which we undertook to do on all immunized subjects.

The results obtained are interesting and worthy of study. Out of 1663 cultures from the noses and throats of positive Schiek Re-actors, the Laboratory reports 103 positive cultures, or 6.2 per cent,—all non-virulent. Nor have the findings from 1000 cultures from negative Schiek Re-actors been at all different,—57 or 5.7 per cent. of these were found positive,—likewise all non-virulent; in other words, a total of 6 per cent. positive cultures—100 per cent. non-virulent.

Some contributions to the literature, notably

one by Beckler, Gillette, and Parker, of the Massachusetts State Department of Health, in the *Journal of Infectious Diseases*, December, 1921, in which it is reported that avirulent diphtheria bacilli are uncommon in this state, and that out of a series of 8000 cultures tested, approximately 95 per cent. of the positives were virulent would seem to negative these findings as to virulency. I offer no criticism of the Laboratory in asking whether the Laboratory diagnosis of diphtheria, resting as it does wholly on morphologic grounds, may not be a prolific source of error in our morbidity records.

The re-culturing of the positive Schiek re-actors after the triple T.A.T. injections have begun within the past week. To date we make a progressive report of 257 cultures taken,—the result, 11 positives, or 4.2 per cent. If this percentage obtains throughout, it would seem that the T.A.T. immunizations are not a factor in increasing the carrier state. Personally, I can't understand how an immune rendered so by T.A.T. should be more potentially a carrier than one showing natural immunity.

An interesting observation made by the writer was the varying proportion of reactions in the same age group furnished by different samples of toxin. It was determined to try out a series of cases in the adult age group (20-46), said group being the one which might naturally be expected to react to protein. For this purpose two lots of toxin were procured from different laboratories, which will be referred to hereafter as Toxin A and Toxin B. The variations in the results obtained from these are certainly striking.

For example,

Toxin A showed 33 per cent. positive reactors.

Toxin B showed 21 per cent. positive reactors.

Toxin A 1.2 per cent. positive combined.

Toxin B 5 per cent. positive combined.

Toxin A, 9.9 per cent. pseudo.

Toxin B 46 per cent. pseudo.

Toxin A 56 per cent. negative.

Toxin B 28 per cent. negative.

A very simple computation shows that the protein reaction to Toxin A was 11.1 per cent. as against 51 per cent. with Toxin B. In other words, almost five times as many protein reactors from B as from A.

The question may be raised as to the possibility of some error of observation, but this was guarded against by one observer making all the readings, independently checked by five others. The number of positives from Toxin A was 34.2 per cent.; from Toxin B, 26 per cent., which presents a source of error and if followed to its natural conclusion would give a variant in 80 cases out of each 1000.

In view of the legal liabilities based not on errors of technic but on errors of judgment in the readings (induced by whatever cause) this experience would seem to furnish food for thought if not for standardization of toxin, and

would make even the experienced operator wary of issuing certificates of immunity based on reactions produced by toxins of uncertain strength.

Surely any conscientious worker in this field of preventive medicine will find less trepidation if he could deal with a product of uniform standardization.

In connection with this matter of protein sensitization, it may be said that the big outstanding objection on the part of physicians and public alike to immunization of susceptibles by T.A.T. is due to the severity of the reaction to the introduction of this foreign protein. To reduce this reaction and consequent objection to a minimum, the writer has for the past month been using the 1/10 L. plus T.A.T., obtained from the New York Department of Health Laboratory, this having in their hands given the best results, and the findings of the Boston Health Department being in substantial agreement with those in Manhattan.

Now it must be understood that this report is offered as progressive only. That the control of diphtheria by means of the Schick and T.A.T. method is quite worth while seems to have been amply proven by such pioneers as Park and Zingher of New York, and Lilley of Massachusetts, also by Dr. Francis G. Curtis, the chairman of the Newton Board of Health, who so successfully blazed the Schick trail, and of whose enthusiasm and whole-hearted cooperation I wish to make acknowledgment.

However, it is not in the hands of such men as these, zealous and capable public health officials though they are, that the future of this most beneficent measure of preventive medicine rests; it rests with men such as you here this evening—men who rank high in the respect of the medical world; men in whose power it is to influence thought in student and practitioner alike; men whose privilege it is to enter in an advisory capacity the homes of the most influential of our citizens.

The success or failure to influence public opinion in the advancement of medical science rests largely with you.

Let me then, with full appreciation of this opportunity of appearing before this body, urge upon you the necessity of not merely assenting to the desirability this most admirable method of ensuring to the child his right to live, but also the necessity of combating the most insidious, delusive, subtle and ensnaring attempts on the part of well-financed, ill-informed, but always alert propagandists, to render our efforts null and void.

It now becomes my pleasant duty to acknowledge my great indebtedness to the Schick staff of the Boston Health Department, for without their zeal, loyalty, enthusiasm and devotion, the almost unbelievable—26,000 tests in less than six months—would not have been possible.

Criticism and credit generally falls to the lot of a director, or chief of any staff. I, as di-

rector, deserve and welcome the criticism, but to the Schick staff of the Boston Health Department, one and all, the credit belongs.

Gentlemen, I thank you.

DR. PAUL EATON, United States Public Health Service.

Mr. President, and Members of the Society. My only excuse for trespassing on your time and attention is that I am very much interested in this work. The results obtained by Dr. Ceconi are in large measure a duplication of those obtained elsewhere by workers in the same field, but they are none the less valuable and worthy of record. I consider that it has been no small privilege to be permitted to examine the records and to work on the statistical side of the question. My thanks are due to Dr. Ceconi and to Commissioner Mahoney for that privilege as well as for many other favors.

So far as the "deep stuff" is concerned, you are probably all familiar with Mark Twain's division of liars into three classes, viz: plain liars, damned liars, and statisticians. If you will listen closely for a few moments you will discover that my knowledge of statistics will not warrant a higher classification than first or at worst, second class for me.

Dr. Ceconi has read you the gross figures for the work done to date. From the small beginning he described the work has grown with such amazing rapidity that it has been impossible for me to keep up with it. I am able, however, to present for your consideration first a series of 5744 cases from the Clinic at Carney Hospital. This does not by any means include all who came to that Clinic, but it does embrace all whose age, sex, and reaction I could easily tabulate, and the number is so near the total that the study of the series ought to give some dependable results. This Clinic was a general one, therefore there was not that restriction as to age which is imposed by attendance at school.

Chart I is a curve showing the number of children at each age included in the tabulation. Observe that at the ends of the curve the numbers are small as they should be if the selection is random. Note also the hollow in the top of the curve at age 9. Technically a bi-modal curve, this looks as though there were some factor or factors tending to a definite selection of the ages 8 and 10, but a very simple correction shows that this is not the case, as I hope to prove to you by showing you a curve, Chart II, indicating the number of persons at each age living in the city according to the census of 1915. The numbers decrease up to 15 and then increase again. If, now, in Chart I we substitute for the actual numbers tested, the ratios between these numbers and the numbers in Chart II we get a curve which is not bi-modal, but has its highest point at age 10. This indicates that the variates are grouped as they should be, about the midpoint of childhood.

Chart III is a graphic representation of the

incidence of the various reactions. The space between the horizontal lines represents the total number tested at each age as 100 per cent., and the irregular line divides the positives or susceptibles from the negatives, or immunes.

The numbers at the ends of the curve, as I said before, are rather small, and we would therefore hesitate to base any deductions on percentages derived from them if they were not corroborated by other evidence. The middle portion of the curve provides this evidence and makes the whole curve very convincing.

Note that the greatest percentage of susceptibility is at three years, or rather between two and three years. This means that the immunity of the infant, however acquired, is fleeting. The figure for the first year of life, 63 per cent., indicates that we should not take this immunity too seriously anyhow. This is in line with the fact that in the last eleven years 10 per cent. of all the deaths from diphtheria in the city have been in the first year of life.

Susceptibility diminishes steadily as age increases, which is what we would expect in a population subject to infection. But if you take the number of immunes at any age and subtract from it the number of reported recoveries from diphtheria at that age, it will not give you the correct number of immunes for the next year. Dr. Chapin, in his book on "Sources and Modes of Infection," says that for each recognized case of diphtheria there is at least one unrecognized case. These figures demand not less than five cases. I should like to know whether an increase after the age of 17, which is not shown here, is due to the influx of those who have spent their earlier years in an environment unfavorable for the development. As an example of this kind of environment, the following figures may be of interest. In the North End, where living conditions are crowded, only 80 out of 591 children tested were susceptible, or 15.2 per cent., whereas in Jamaica Plain, Allston, Brighton, and Roslindale 1423 out of 1957 were susceptible, 72 per cent.

As susceptibility diminishes you will notice an increase in another item. This is the number of protein reactors. At the risk of repeating what you already know, let me say that this protein reaction is the response of certain sensitized organisms to the presence in the test solution of certain proteins. It has been believed and taught that the chief cause of this reaction is the protein of the diphtheria bacillus, which by some process of autolysis is rendered soluble. Now it is certainly reasonable to believe that while the body is developing an immunity to the toxin of the diphtheria bacillus it may, in a certain proportion of cases be acquiring a sensitiveness to the bacillus itself. But it may be offered as an objection to this that from 20 to 30 per cent. of the protein reactors are Schick positives, that is, they have no immunity to diphtheria. Another objection is that the reaction occurs so much more fre-

quently in females. I do not suppose that anybody will lose any sleep over it, but I cannot subscribe to the belief that the protein of the diphtheria bacillus is the sole or even the chief cause of this reaction. Thanks to the energy of Dr. Ceconi, some experiments are in progress which we hope will help us at least to understand this matter better.

So much for the reactions at the Carney Hospital. I have collected data on 6285 additional cases and have added them to the series just discussed, making a total of 12,326 cases, a number approximately half of the whole number tested. Inasmuch as these new cases were furnished largely by the parochial schools there is no difference in the ages below five years. Fig. IV is the curve for the distribution of the reactions in the whole group.

What may we learn from these figures? First, susceptibility is greatest between two and three years of age and diminishes steadily up to 17 years at least. If we apply the percentages derived in this manner to the total population at the ages under discussion we get the curve of Fig. V, which shows the probable number of susceptibles in the city population. In corroboration I have plotted in a different way the deaths from diphtheria in the city in the last eleven years, according to the age at death. Fig. VI. In pre-antitoxin days this figure was 80 per cent. This indicates that we should devote a great deal more attention than we do to the immunization of those of pre-school age. If we attend to these we will save a larger number of lives per unit of effort.

In the course of this study it occurred to me to investigate the actual importance of diphtheria as a cause of death in the city by calculating the ratio between total deaths and diphtheria deaths. It was not convenient to go farther back than 1871, but the figures since that time are fairly reliable. Fig. VI embodies the results of these calculations. Notice that the introduction of antitoxin in 1895 had no immediate influence. It was not until six years later that the ratio dropped to 2 per cent., which has been its limiting value ever since. The great drop in infant mortality might be thought to have had an influence on this curve, but a careful re-calculation, after deducting infant deaths from total deaths, shows that it has not.

As a check on this method of attack I calculated the same ratio for scarlet fever deaths in the city, with the results shown in Fig. VII. This curve gave me a great deal of concern at first because I could not account for the drop in 1877. Without any therapeutic advance, without even the discovery of the etiologic factor in this disease, the ratio suffered in that year a drop much more marked than that of diphtheria 25 years later. After worrying over this for a couple of weeks, and trying to drag in the influence of the introduction of the clinical thermometer I gave it up. One day while rummaging around in the vault of the Health Depart-

ment I found a Report of the Board of Health for 1877. On January 9 of that year an order was issued to the effect that when scarlet fever existed in a house no child from that house was to be allowed to attend school without special permission from the Board. I have never seen any publication of this curve as a justification of our much criticized methods of handling scarlet fever, and I am glad to give it whatever publicity I may.

Among other points of interest we found that there is a difference in susceptibility in the sexes. Forty-three per cent. of the boys are susceptible, as against 47 per cent. of the girls, and the numbers tested are large enough to bring the probable errors down to the Volstead limit of one-half of 1 per cent. On the other hand, in ten years there have been 909 deaths among males to 857 among females. This means that while the male is less susceptible, he roots around more and digs up infection.

Dr. Ceconi has pointed out several items of more than usual importance. First, a high percentage of immunity among Italian children, no matter where they live. Second, familial tendencies. In 96 per cent. of the cases in which urines have been tested they have shown the same reaction. When two or more members of the same family were tested, in 85 per cent. of instances they showed similar reactions modified, of course, by age. Ninety per cent. of those who report recent recovery from diphtheria show immunity.

Original Articles.

CONVALESCENCE: II. A PROBLEM IN PREVENTIVE MEDICINE AND PUBLIC HEALTH.*

BY JOHN BRYANT, M.D., BOSTON.

I. Introduction.

In this day and generation, most of our large hospitals display in their corridors, direction signs, some of which bear the legend "THIS WAY OUT." But these signs too seldom tell the patient whither the hospital portals lead. Thus, in more senses than one, many hospital exits may be inadequately marked.

Of what use is intramural hospital standardization and efficiency when as is so often the case the poor convalescent may be medically lost when but a few rods from the hospital walls? For example, the rational patient who has been seriously ill, longs with an intensity proportionate to his previous illness (even if this longing be not recognized), to be led to the

highway of efficient health. Yet such a patient may leave hospital by any one of its many portals, without having learned from those who should have been his mentors, that the pleasant fields of efficient health may be best approached through but one portal in the hospital wall. Leaving only by this half-neglected portal, may the patient come out with greatest certainty upon the sometimes tortuous path marked "CONVALESCENT CARE," by which alone he can hope to reach his desired goal of health.

Unfortunately for the patient, this hospital portal called CONVALESCENCE, is all too often hard to find. The sign is obscure, old and neglected, and other exits are so much more modern in appearance that the poor patient, left perhaps to his own devices, is too prone to follow the brighter lights and find himself wandering down some great white way of medicine lined with the tempting bazaars of industrious and hyposcrupulous traffickers in medical gold bricks.

Leaving the hospital by other portals, the patient may flounder aimless weeks and months in the dismal swamp of clinical neglect before he comes at last, if ever, upon the highway of health; and from this dismal swamp of clinical neglect rises in recent years an increasing miasma of pestilent charlatanism which bids fair to envelop the wandering pilgrim in its folds, leaving him nor means nor health when at last he stumbles out upon the road he seeks. Let us hope that in the not too distant future these gathering vapors through which so often the patient has had to grope his way, must recede before the rising sun of an awakened art of medicine.

It seems to have been the fashion in this latest generation of speed, to assume that by some sleight-of-hand, some necromancer's trick, the sick patient can be wafted back to health without travelling that path of convalescence which was so much better known to our elders than to ourselves. But no medical thought in recent times has been more pernicious or more productive of sorrow and misery to the hosts of the "half-cured" with which our charities and hospitals are increasingly beset, than this idea that modern specialized science has made unnecessary the once universal care with which the old and beloved family doctor surrounded his convalescent patients.

The present paper is not a casual presentation of the subject of convalescence. It is based upon an intensive ten-year study carried on surgically and medically, in post-mortem rooms and in libraries, both in this country and abroad. This study was primarily undertaken to increase the information available concerning the mental and physical characteristics of the type of patient referred to by me in various publications, as the chronic intestinal invalid. This study led to an appreciation of the fact that this special type of patient, as seen in hos-

*An address given at a combined meeting of the Worcester and Worcester North District Medical Societies at Fitchburg, October 31, 1922.

pital and private practice, represented one focus upon the larger general problem of convalescence. Invaluable personal experience in convalescent work on a large scale was gained in army service, while stationed at the Walter Reed General Hospital and the Surgeon-General's Office. To this was added a study of existing civilian convalescent methods, and of the possibility of applying to civilian work some of the lessons learned in army convalescent work. To familiarity with actual conditions in civilian practice in this country, has been added during the past summer an investigation into European methods of convalescent care. It is then not unreasonable to state that there are presented in the present paper, the conclusions from a serious and prolonged consideration of the general subject of convalescence, from the points of view of the individual patient, preventive medicine, and public health.

The conclusion is unavoidable that our prevailing method of neglecting the convalescent patient is radically wrong; it works to the disadvantage of the patient, the physician, and the community. The object of this paper is therefore to direct attention to the existing circumstances which lead to this conclusion, just stated, and to point out a few of the methods, all of them tested by experience, by which further progress may be made in this neglected field of medicine, in the certainty that when existing conditions are realized and methods offered by which these conditions may be bettered, the convalescent patient may confidently look forward to better care at the hands of the medical profession. The community, too, may look forward to a higher standard of health among its workers.

II. *General Considerations.*

The word Convalescence, as is the case with other words, means different things to different people. From the point of view of the patient, it may be taken to mean that inevitable space between illness and health through which every patient who has been seriously ill must successfully pass in order to regain even a semblance of perfect health.

For the physician, Convalescence may be characterized as a condition of physical and mental disorganization and instability, which may commonly be expected to follow upon immediate recovery from a serious or exhausting illness, the condition continuing thereafter to manifest itself, but decreasingly, until such time as the patient has arrived at that degree of physical and mental poise which must for the given patient be considered his attainable maximum.

To the physician awake to his responsibility, convalescence is not a simple automatic process, but a complicated neuro-muscular transition from the relative disorganization induced by serious illness or prolonged fatigue. It is a pe-

riod in which the patient needs much guidance since he is for the time in a state of mental reversion frequently evidenced by a childish irritability and even querulous credulity resulting in a peculiar susceptibility to suggestion. It is a period in which the patient urgently needs the mental and moral support of a competent physician in whom he has implicit faith. A portion of the opportunity of this physician is to guide the unpoised mind of the patient, to help him differentiate between the desirable and the less desirable elements for health progress, and to keep him from falling prey to the nearest commercial health fakir. There can therefore be no one to blame should this latter misfortune befall the patient, except the physician who has failed his convalescent patient in his hour of need—a psychological occurrence which unfortunately too often occurs, usually because the hard-pressed physician is too preoccupied in caring for the seriously ill and in preventing sudden death, to give equal and adequate attention to the patient who has passed beyond the fear of immediate dissolution.

To the modern acute hospital, the convalescent patient is too apt to mean one who is no longer interesting, though it cannot be less true now than in 1844 when Vidard-Dupin proclaimed this truth, that "to the physician belongs the care of convalescence no less than the care of acute disease." Our hospitals in their annual reports emphasize the average duration of stay of the total of their patients, but neglect to give the percentages of those who have not left the acute hospital wards until after weeks or months from their date of entrance. This is but a symptom of a universal state of mind from which relief need not be expected so long as the same physician must simultaneously focus attention upon acute work in which the changes occur daily or hourly, and upon convalescent work in which the changes need not be expected within less periods of time than perhaps weeks and months.

To the community, convalescence perhaps suggests only a vague conception of recovery from illness. The community does not appreciate that convalescence is in effect the one remaining gap left in the public health cycle; that to acute hospital care must, in the words of Brush, be added "recuperation with reconstructive treatment and functional and employment follow-up" before the complete responsibility of a given community for its convalescent sick can be said to have been fulfilled. There can be no doubt that every community will accept this responsibility once it is clearly pointed out, and when each community understands that such preventive medicine may be carried on in the open country not only to the greater advantage of the patient but at a cost to the community only one-half to one-third that which is necessary for the prevailing maintenance of convalescent patients in acute hospitals, a sys-

tem at once detrimental to the health of the convalescent patient, and to the fullest proper use of the acute hospital beds.

The importance and logic of adequate convalescent care has been a matter of record for at least a thousand years; yet during the present generation interest in this vital phase of preventive medicine and public health work has been on the decrease rather than the increase, until with a few notable exceptions real interest in convalescence has today almost reached the vanishing point. Furthermore, not only is the total literature upon the subject very scanty, but recent literature, upon the existence of which the revival of adequate interest must of necessity depend, is conspicuous by its absence.

The Paris of 1640 perhaps knew better or saw more clearly than we do, the importance of providing for its convalescent patients, for even at this early period nearly 30% of the total available beds in Paris were given over to convalescent patients, the Hotel Dieu and the Charité maintaining distinct convalescent sections in their hospitals. The England of Robertson (1837) saw and to some extent understood the need. So did the later Paris of 1858, which under an edict of Napoleon III accepted anew its civic responsibilities and provided 1000 beds for the country care of its men and women convalescent from acute illness in its city hospitals.

So also, the Boston of one or two generations ago, recognizing the problem, constructed several small homes, both as private charities and in connection with its hospitals. The total beds thus made available were, even if inadequate, a definite step in advance toward the better care of its convalescent patients.

So, too, did the donor of the Burke Relief Foundation more recently make himself a benefactor of the convalescent poor of New York City, by his generous gift of a 300-bed convalescent hospital at White Plains.

Yet somehow, a prolonged study of the general subject of convalescence leaves the uncomfortable sensation that constructive interest in the convalescent patient is less widespread now than in former generations. During the past thirty years or so, it almost seems that the individual, who after all is the patient, has been receding from the medical focus. Can it be that there is any connection between this possible change in the general medical perspective and the decrease of interest in the convalescent patient? It would seem so, and that these shifts in viewpoint have come about somewhat in proportion as the test-tube and the microscope have revealed to the scientist the faceted bits of knowledge which when correctly fitted together make up the modern mosaics which are so often presented as the typical cases in the large series of experiments conducted to verify some newer research.

Whatever the cause, the prevailing clinical

neglect of the convalescent patient constitutes a very real, and the last remaining serious gap in our public health cycle. Worse still, this neglect by the responsible medical authorities constitutes a direct invitation—an invitation which they have not been slow to accept—to the multitudinous cults which today beset the convalescent patient on every side immediately upon his discharge from the sheltering walls of the acute hospital. These cults, as one might say at the invitation of the medical profession, make the most of their opportunities and fatten upon the emotions and fears of the discharged patient; and he in his too unguided quest, is left in the yet unstable mental condition so characteristic of incomplete convalescence, to the mercies of the nearest beguiling vendor of specious promises of health.

In a desire to make available the information upon which the inevitable revival of interest in convalescence must logically be based, a chronological review of the subject has been prepared. This, the first of a series of articles upon Convalescence appeared in the BOSTON MEDICAL AND SURGICAL JOURNAL for Nov. 9th. A consideration of the information presented in this article can lead only to the conclusion that we have scarcely added anything new to the treatment of convalescence in the past 50 years. It is true that there have been some new or additional applications of old methods; but the medical care, the diet, the attention to the mental condition of the patient, occupational therapy, controlled exercise, travel, and nearly every other measure which one can think of, have all been utilized by the discriminating few for scores if not hundreds of years, in an attempt to bring the previously sick patient back to his highest attainable level of health.

In recent times, New York has been unusually fortunate in having its attention focused upon the necessity of adequate convalescent care, firstly by Frankel and others; secondly, through the gift of the large 300-bed convalescent hospital of the Burke Foundation. Dr. Frederic Brush, its energetic director, has done much since the opening of this institution in 1915, to spread more and more widely the gospel of better convalescent care.

The Burke Foundation, and the Paris convalescent system are today the models for the world, from the points of view of private and municipal care. Passing over, however, the important and pioneer work carried on by these two agencies, and passing over the extremely thorough and valuable report (1920) of the Cleveland Hospital Council, it is certain that our war experience provided the greatest recent impetus to better convalescent care. The opportunities for such care were unusually favorable in our own army since we had to a much greater extent than our allies, the available man-power for the carrying out of convalescent camp activities.

III. Convalescence in the Army.

Thayer, from his vantage point of Chief Medical Consultant to the A. E. F., has summed up, perhaps better than others, the importance of army convalescent work.

Reporting in 1919, upon the medical aspects of reconstruction, Thayer stated that apart from the fundamental question of diagnosis, the medical man was confronted by two problems; prophylaxis, and his duty to the patient during convalescence. Thayer pointed out that in wartime the value of convalescent care is put on its proper basis in the reconstructive program. He noted that convalescent camps had proven a valuable factor, with their arrangements for work, play, rest, recreation and amusement, and further remarked upon the importance of the psychological element in recovery. Thayer also pointed out that "war statistics in regard to the duration of convalescence have shown the need of convalescent departments in connection with large hospitals, in which may be carried out every arrangement for the well-considered rehabilitation, mental and physical, of the convalescent patient."

Part of the proof upon which Thayer relied for this statement, is the exceedingly important work by Bridgman, who reported in 1919 upon his experiences in conducting a large convalescent camp in France. The general conclusion to be drawn from this work by Bridgman, should be widely published as accepted fact. He provides clear proof that the average patient who has been sufficiently ill to require the average length of stay of three weeks in an acute hospital, has also been sufficiently ill to require an additional average period of three weeks under observation in a convalescent camp or hospital, before he can be safely discharged with any assurance that he will be able to successfully hold down the job for which he has been prepared, both mentally and physically, during the period of his convalescent care.

The army provided an opportunity which can hardly be hoped for except in time of war,—that of applying, on a large scale, convalescent theory to convalescent practice. It was my privilege to be concerned in the originating and in the working out of some of this theory, and in its application to convalescent practice; first, while organizing and conducting a Convalescent Department at the Walter Reed General Hospital, and later while stationed as Consultant to the Department of Physical Reconstruction at the S. G. O., in which latter position the application of the policies of this Department to actual service conditions was largely under my control in the army hospitals throughout the northeastern states. Being at the time the only member of the Department who had had actual experience in conducting a convalescent department, I had the unusual pleasure of having practically all my recommendations accepted. The degree of influence which could be exerted

upon convalescent practice at the army hospitals, may be suggested by the fact that a single report of mine was adequate for the obtaining, direct from the Secretary of War and in the face of active and powerful counter pressure, an order for the immediate closing of an institution which, on account of undesirable features connected with its continued operation, was proving a trial to the Department of Physical Reconstruction.

In general, convalescent problems in the army were much easier of appreciation than in civil life, for the care of patients of various ages and both sexes seems to complicate problems which become clearer when studied upon the more or less homogeneous stream of adult males which constitute the army. Under such simplified conditions, one can more easily determine the time factor in convalescence, and one can more easily appreciate the need for and effect of such adjuncts to actual medical work, as Physiotherapy and Occupational Therapy. As a result of actual war experience then, there arose a clear perception on the part of many serious workers in the field of convalescence, that the immediate repair of the physical condition which brought the patient to hospital is not too difficult, provided that one may have the patient under observation for periods of controlled increasing exercise during which it may be definitely proven that he is or is not capable of the degree of physical activity involved in his return to his former full duty status.

Physical hardening was, however, by no means all that was implied in our army application of adequate convalescent care. For more than a century, the French have been pointing out that the convalescent patient is in a state of mental and moral instability, a state in which the patient is mentally soft, hyper-irritable, and easily ductile both toward good and bad. It is therefore of extreme importance that this impressionable state should be made use of to the fullest extent for the purpose of guiding and hardening the patient mentally so that, upon his final discharge from medical supervision, he may arrive upon his job hard both mentally and physically, ready to take on permanently full-duty work without danger of relapse and without the probability of days or weeks being required while on the job for the completion of the hardening processes which should have been finished before the patient left the care of the physician. In essence, therefore, the problem of convalescence is more a mental than a physical one, for unless the patient's mental disorganization be replaced by orientation he may, though physically fit, arrive on the job mentally handicapped for serious work.

Admitting the difficulty of singling out for special consideration one factor from the many which dovetailed to make the success of the convalescent program in our army, my personal conviction is that of all the measures employed, those activities grouped as Occupational Therapy

were of the greatest value in facilitating convalescence, granting always a reasonable degree of skillful application of the other measures simultaneously employed. Occupational Therapy, though old in principle, was new in application in our army. The regulars looked upon it askance, but only until, it being in satisfactory operation, the truth penetrated and they were forced to admit not only a greatly decreased viciousness and destructiveness on the part of the patients, but an increased tractability and mental happiness,—a total result which all commanding officers recognized as making for easier and smoother operation of their hospitals. Thus was given new weight to the age-old deep sea adage that "the way to keep your sailors happy on a long voyage is to keep them busy, but not too busy." On the old clipper ships, however, this did not mean keeping the sailors busy doing silly things, but things which even if fanciful or not absolutely necessary, yet contributed to the upkeep of the ship, and by so much increased the morale, which is to say, the pride of all concerned in the ship in which they sailed.

This cardinal principle of keeping the patient busy holds good today. The patient must of course have a reasonable amount of amusement, but the best underlying basis for Occupational Therapy is the performance of necessary tasks of maintenance, the utility of which the patient can easily both see and understand.

Upon this background must then be applied a second cardinal principle of Occupational Therapy. It is the responsibility of those engaged in Occupational Therapy to see that from their efforts the result comes, that no patient leaves hospital or medical care without the conviction that, instead of wasting time as he had feared, he has, while sick and necessarily physically incapacitated, gained knowledge of such definite and lasting value that it will enable him to leave hospital better prepared than at the time of his admission, to do his work in the world, and to support his family upon a higher level than he could otherwise have expected to do. Thus only can the patient come to look back upon his hospital experience as a blessing in disguise, and thus only can the physician completely fulfill his responsibility to his convalescent patient.

Imagine for an instant, the effect upon family life which was in so many army instances brought about by such creative work. The laborer enters the army, loses a leg or two, and by and by returns to his home not as a crippled laborer but as a skilled artisan, who now may with his head in a day earn more than with his legs in a week. Such instances, as a result of army Occupational Therapy work, were almost too numerous to count. The shortest route by which a patient may be brought from a laboring status to that of an artisan is perhaps through the field of art; not what some might call high art, but the simpler forms of modeling, and drawing on the scale of perhaps poster work.

In my own convalescent department, even be-

fore the existence of an organized department of Occupational Therapy at the Walter Reed, all patients under my care were required to engage in some form of Occupational Therapy for at least two hours daily, the character of the occupation depending upon the physical condition and mental calibre of the patient. From my own experience alone, one or two examples may be cited. A Swede, an intelligent but uneducated blacksmith, had been brought through double pneumonia, severe arthritis, endo- and pericarditis, and other complaints enough to finish the ordinary mortal. Recovering, he was at first interested in simple manual work for the purpose of restoring his joints to normal, and thereafter he was gradually brought to the stage of focusing upon something of use after he should leave the army. The patient was slowly interested by me in the possibility of applying his native and very considerable skill as a blacksmith, through the medium of blueprints, which he had previously been totally unable to understand. In a few short weeks, this Swede was doing blueprint work for one of the Government offices in Washington. It became possible for him to set up his own working drawings from actual measurements, and he returned home as a qualified worker in metals. The sequel was that within a few weeks this patient sent my head nurse a most excellent gold wrist-watch, accompanied by a touching expression of profound gratitude, and the statement that as a result of what he had learned at the hospital, he had been able to earn more money in the first week after his return home than in the average month of his previous blacksmith work.

Such experiences, multiplied, led however to the inevitable conclusion that for the average class of patients, the greatest result for the least effort is obtainable through the application of elementary academic education. Eventually the Walter Reed had machine and other equipment for Occupational Therapy, valued doubtless in excess of \$200,000, and yet the patients in many cases were unable to take advantage of this elaborate equipment through their lack of elementary education. The attention of the writer was therefore focused throughout the rest of his army experience upon the development of the academic side of Occupational Therapy.

The growth of the Occupational Department at the Camp Upton Base Hospital is an excellent example of the utility of such simple procedures. Here an attempt had been made to interest patients upon their arriving at a stage of progress which made it possible for them to navigate beyond the limits of their wards, the patients being largely of a class who had been for months confined to bed by infected bone wounds. At the suggestion of the writer, this futile attempt was given up, and attention was focused upon the patients who through continued disability were totally unable to leave the wards, or perhaps even their beds. In a few weeks, from a negli-

gible number, the total of men who had been interested and who were actually working hard to improve their elementary education, had increased to over 400, with the result that this hospital, though small, soon had a larger number of its patients enrolled in worthwhile elementary educational work than was the case at any other army hospital in the country.

Such developments cannot but have lasting and beneficial value to the community, and when applied in conjunction with other measures available, such as Physiotherapy, progress is practically unlimited. Thus, on one visit to the base hospital at Camp Dix, there was seen in the Physiotherapy room a young Italian with a seriously injured right elbow. He was lying on his left side on a plinth, and the Physiotherapy aide was massaging the injured joint. The patient was apparently wholly oblivious of the fact that his arm was being vigorously manipulated, except for an occasional contraction of the muscles of the face. He was completely absorbed in the reading of a small book which he held in his uninjured left hand. Investigation proved this book to be nothing more exciting than an elementary school type of English grammar. The inference is obvious.

One other of the fundamental principles of Occupational Therapy is worth remembering. Every patient in his progress from illness to health goes through what seems to be a mental reversion process, paralleled to some extent by the physical growth of the human embryo which ascends in its progressive growth through the lower and more primitive stages of development, before arriving at the stage of development characteristic of the human which it is to be. During his mental reversion process, the patient must successfully climb again through the stages of mental development characteristic of the child and of the adolescent, before he can with approaching complete recovery arrive once more at that degree of adult mentality which characterized his previous normal state of health.

Occupational Therapy must therefore at first be wholly diversional in character, as would be suitable for a child. In this phase, all handicraft work is of the greatest value as opening again to the patient the door of interest in his surroundings.

The greatest defect in the usual application of Occupational Therapy, however, is just this, that it often considers its responsibility to extend no further than this first stage of the patient's mental progress, whereby it by just so much falls short of what it should accomplish for the patient.

This first "kindergarten" or diversional phase of Occupational Therapy should be followed by a second transitional phase in which diversional or avocational work becomes increasingly replaced by serious work of lasting or vocational value, the transition keeping pace

with the rate of progress of the patient through his mentally adolescent stage of recovery.

The third and highest adult phase of Occupational Therapy must be concerned, as in actual life, almost wholly with serious or vocational work of permanent value. In this phase is included that opportunity for mental and moral uplift which may change for a patient his entire viewpoint and future direction in life. The mentality of the patient at this stage is not passive, and it is the responsibility of Occupational Therapy, as of the other factors concerned in convalescent care, to utilize this mental activity to its fullest extent while the mind of the patient is still in an essentially fluid and plastic state; this responsibility breathes unending possibilities to the Occupational Therapy worker alive to and fitted for improving the opportunity thus presented,—that of mentally molding the patient for the better during the progress of his convalescence.

Lest some one may come to think that the procedures just outlined can apply only to long-time convalescence, thus making them inapplicable to those convalescing more rapidly, the following conversation between myself and a very capable Director of Occupational Therapy at Camp Devens is quoted in substance as follows:

"There is a widespread belief that your procedures can be applied with benefit only to those patients who are to be available to you for weeks rather than days. What is the shortest time in which you can feel certain of giving a patient something to think about, which will stick and keep on making him a better man after he leaves you and the hospital?"

"If I cannot give any man not a moron, good reason to be glad he came to me, within four days of the time I first see him, I will give up my job. You can take it from me that this work is one of the biggest opportunities for human betterment which a hospital can offer a sick patient, and you can do just as much for an acute case as for a chronic one, if you know your job."

IV. *Convalescence in Civil Life.*

Turning from the study of the simpler convalescent problems of the army to those existing in civil life, it becomes obvious that the principles of treatment are the same. Furthermore, it is the opinion of Brush of the Burke Foundation, that a mixing of the sexes under supervision, as at his institution, is desirable; he believes that this mixing of ages and sexes produces a mental background which more nearly resembles the age-sex mixing of the normal life for which his patients are preparing. There seems no good reason then to infer that the convalescent problems of civil life need be in practice much more difficult of solution than those presented in the army.

Convalescent work in civil life can be made effective at four principal points of application,

regardless of the financial status of the patient. All four have been covered in my personal experience. These four usual points of application are:

- (a) Within the acute hospital.
- (b) In the outpatient department.
- (c) In the home of the patient.
- (d) In a convalescent home.

(a) At the Walter Reed General Hospital, my Convalescent Department functioned as a separate unit but within the hospital wards, cases being transferred to the convalescent department from both the medical and surgical services. The important principle was here established, through the S. G. O., that the Convalescent Department should not be under the control of the regular medical services responsible for the care of the acutely ill, but should report independently and directly to the Commanding Officer, in all administrative matters. Concerning the desirability of having in operation such a special convalescent service under the roof of a large general hospital, the following sentences quoted by permission from a letter written to Dr. Richard Cabot in 1919 by Dr. Randolph, the then chief of the Medical Service at the Walter Reed, are suggestive: "Major Bryant's experiment at the Walter Reed Hospital has in my opinion demonstrated a successful method of dealing with a situation which constitutes a legitimate ground for criticism of our profession, both in medical and private practice; and one which contributes largely to the prosperity of quacks. I feel that it is the one original contribution to medical progress during the war by the Medical Service of the Walter Reed Hospital."

(b) An outpatient convalescent clinic has been conducted by the writer, at the Massachusetts General Hospital. The number of cases which can thus be cared for personally can never be large, since they are for the most part chronic and obscure, but it has been possible to eliminate from the outpatient department circulation yearly, certain patients who might otherwise have remained in the class of "half-cured." This method must, however, remain less productive, in proportion to effort expended, than group care in an efficiently organized home.

(c) Although for obvious reasons the bulk of convalescence probably always will take place in the homes of the patients, evidence is available to prove that in the great majority of cases home conditions are not adequate. The attempt must therefore be made, not only to improve home conditions through visiting nursing and social service agencies, but also to provide a substitute in the guise of a well-conducted convalescent home, and then make it the mode for patients to use it. When it is necessary to provide convalescent care for the patient in his own or another private home, the same principles apply which have proven successful in

the well-organized convalescent home, as outlined below.

(d) Of all means at our disposal, the efficient country home is undoubtedly the best single opportunity for creative and constructive convalescent work. Here everything is favorable, and costs are low. Also, the value of the well-conducted convalescent home as a dispersion point for spreading health gospels in the homes of the graduated patients can scarcely be overestimated, and if well conducted it must act not only to set a standard but to raise the general level of convalescent care in the surrounding community. For obvious reasons, it has been proven wiser for a community to maintain one centralized home of from one to three hundred beds, than for it to provide an equal number of convalescent beds scattered in several homes of twenty to thirty beds each.

Regardless of the number of beds involved, however, there should be no deviation from the established army principle that a convalescent hospital should not be under the domination of any general hospital service with which it may be affiliated. Both branches of the hospital plant should report directly and independently to the controlling board of management.

The conduct of a convalescent home involves practical questions, such as costs, size of staff, sources of maintenance, etc. Facts and figures upon all these points are readily available, the most authentic source of information in this country being the Burke Foundation at White Plains, New York; Dr. Frederic Brush, its director, will prove a fertile source of information and inspiration to those seeking knowledge in this newer field of medical endeavor.

In general, it may be stated that a modern convalescent home should function through a city admission office which may act as an important factor in correlating city health activities, and it should utilize a motor service for the transportation of its patients. If the patients are trained to be properly helpful, not more than one nurse to every thirty to fifty patients will be required, and the cost of maintenance per patient under these conditions should not exceed \$2.00 per capita per day.

Unless a home is endowed, at an approximate cost of one million dollars for every fifty beds available, the sources of maintenance are important. These may include the usual personal subscriptions and, if the home accepts patients from more than one source, funds contributed by hospitals sending patients. These hospital funds may be calculated upon a basis such as the number of expected days of maintenance saved to the hospital by the early transfer of the individual patient to the convalescent home. In England, a simpler method is used, the acute hospital contributing toward the maintenance of the home a fixed amount representing the actual per capita cost at the home for a definite number of beds, by the week, month or year; in effect, the hospital thus rents its convalescent

beds. Also, when possible, the patients themselves should contribute something, from a few cents to not exceeding two-thirds the actual cost per capita, whether their admission source be a recognized hospital or a private physician sending the patient direct to convalescent home without hospital intervention. In addition, both life insurance companies and industrial corporations should be enabled to send patients for preventive convalescence, on certificates from company physicians, through the medium of annual subscriptions to the home, based on actual per capita maintenance cost of a definite number of beds per year, as is the usual custom in England and France.

The most important single point in relation to the use of convalescent homes, is that they should be so arranged as to make possible the acceptance of patients immediately upon their discharge from an acute hospital. It is too often the case that the smaller convalescent homes are not prepared to accept patients until they are practically able to look out for themselves. As a result, the poor convalescent must exist somewhere, and in some manner become sufficiently recuperated to be accepted as a patient in a convalescent home. This means that during the most vital stage of convalescence, the first week or two when the patient has, so to speak, only one leg out of bed, he is left without supervision instead of being carried forward in his health progress in a continuity of medical supervision directly from the acute hospital to the convalescent home.

St. Luke's Convalescent Home in Boston is an example of one of our earlier homes which was not until recently fitted to receive patients directly upon discharge from hospital, with the result that it was tending to become more or less of a home for the aged. Having been called in consultation by its board of management, it was my privilege to make suggestions (nearly all of which have been carried out), which have resulted in making it possible for patients to be received there directly upon discharge from hospital. As a consequence, instead of its being necessary to seek patients to fill the Home, it is my understanding that the Home now has more applicants for admission than it can accommodate, and that these are mostly younger patients, the class which derives the greatest benefit from convalescent care.

For maximum efficiency in the actual medical management of the convalescent home, there are four factors which must work harmoniously. These factors group together to make what may be termed a Convalescent Unit, as follows:

- (A) Medical.
- (B) Physiotherapy.
- (C) Occupational Therapy.
- (D) Social Service.

Such a convalescent unit can be multiplied so as to have one unit acting at each of the four points of application of convalescent work above

referred to, or there may be one such unit in operation at an independent convalescent home. Obviously, if conditions permit, the workers in groups B, C, and D may be active both at a home and at a general hospital.

In practice, the component parts of such a unit, acting through a single medical director who may of course combine in himself the training necessary for applying all these factors, subdivide as follows:

- (A) Medical.
 - (a) Differential Diagnosis.
 - (b) Mental Care.
 - (c) Medical Care.
 - (d) Diet.
 - (e) Exercise.
 - (f) General Hygiene.
- (B) Physiotherapy.
 - (a) Electrotherapy.
 - (b) Hydrotherapy.
 - (c) Heliotherapy.
 - (d) Mechanotherapy.
 - (e) Physiotherapy.
- (C) Occupational Therapy.
 - (a) Curative Therapy.
 - (b) Vocational Therapy.
 - (c) Occupational Therapy.
 - (1) Technical.
 - (2) Academic.
 - (3) Handicraft.
 - (4) Recreational.
- (D) Social Service.

It may be questioned if Social Service should be grouped as a component part of such a convalescent unit, but it is the decided opinion of such authorities as Miss Cannon of the Massachusetts General Hospital, and the experts of the Cleveland Hospital and Health Survey, that Social Service distinctly should act under the supervision of the physician responsible for co-ordinating the activities which should group together in such a convalescent unit as is above outlined, for the worthy purpose of aiding in eliminating the clinical neglect which has been the prevailing attitude toward the convalescent patient.

Exception doubtless will be taken to the repeated accusation of clinical neglect of the convalescent patient. In this connection, an incident at the Bellevue Hospital is instructive. While stationed at the Surgeon-General's Office, the writer was invited, through the courtesy of Dr. Denman Thompson, to present the subject of Convalescent Care before a meeting of the Executive Committee of the Bellevue Hospital. At the close of my brief presentation, a long thin major arose at the other end of the table from where I was sitting, and made vitriolic objections to my inference than any one in his hospital should be in any way neglected. He said that naturally he could not speak for the other services, but that he was positive that no one would find any trace of neglect in his own service in regard to any patient whatsoever. At

the close of his heated remarks, the then chairman, one of the best known and most respected of the older physicians of New York City, smiled pleasantly and spoke about as follows: "Well, Doctor, I am glad to hear what you say, and I congratulate you upon being able to maintain such an excellent standard of service. For myself, I can only say that when I was on active duty at this hospital, my convalescent patients were all neglected, relatively speaking; furthermore, I know that today my convalescent patients in my own private practice are all neglected, as compared with the attention that I must give to those who are more seriously ill." This reply sums up the whole situation.

It is not rational to expect a continual series of psychological miracles, even of physicians. The physician in charge of an acute hospital ward or wards naturally resents the statement that he is, so to speak, thereby unfitted to give maximum care to his convalescent patients, as soon as they have passed beyond the acute medical or surgical stage of the disease for which they entered his service. It is, however, just as impossible to expect the physician whose medical time schedule is sealed upon the rapid changes accompanying grave illness or preceding sudden death, to focus simultaneously upon the slower and less obvious changes of convalescence, as it is to expect of the mariner an equal and perfect vision in both eyes, when he is required to employ a binocular glass one eye piece of which is set for near vision while the other is set for distant vision. No sane person would expect the mariner under such circumstances to obtain maximum simultaneous visual results from both eyes. Likewise, no sane person should expect the same physician to get equally good simultaneous results upon two types of cases differing as greatly in their normal time schedules for physiological reactions, as do the acutely sick patient and the convalescent patient.

The size of the convalescent problem in a given community, and the degree to which the community is caring for the problem, may be easily estimated on the basis of figures available. It is authoritatively stated that there should be about five acute beds per thousand of population, and that there should be one convalescent bed for every ten acute beds. On this basis, let us examine the convalescent facilities of Boston and Fitchburg.

Metropolitan Boston with a population of about one and a half millions has slightly more than seven thousand acute beds, or about the normal number. There should be available some five to seven hundred convalescent beds. The convalescent beds in recognized institutions of Boston, excluding certain institutions for children open only in the summer, total less than three hundred, and these are by no means utilized to capacity. Of this total number, seventy-five beds are for children only. This state of affairs signifies lack of appreciation of

the possibilities of convalescent care. Neither the convalescent patients nor the lay public are primarily responsible for this failure to utilize even these inadequate existing facilities for convalescent care. For the whole million and a half of Boston's population, there are but fourteen convalescent beds for males available in any recognized convalescent home, and these in one convalescent home usually not filled to capacity. These fourteen beds, furthermore, are free only to patients of the parent Homeopathic Hospital. What a contrast is Boston to Paris, which for over sixty years has required a six-hundred bed hospital at Vincennes for the adequate accommodation of its male convalescents alone!

The figures for Fitchburg, given me by Dr. Baker, are as follows:

Total population	57,660
Total acute beds	125
Total convalescent beds	0

From this it would appear: first, that there are only about 50 per cent. of the expected number of acute beds in Fitchburg; secondly, that there are no beds at all for convalescents. Unless Fitchburg is very fortunate, the acute beds now available should be greatly in demand, there being only one-half the number estimated as requisite to meet the community needs. It might then be desirable to have an increase in the number of acute beds. It is probable under existing conditions, that at any time there are in the Burbank Hospital a total of 10 to 20 per cent. of the patients who could stand and would benefit by transportation to a country convalescent home where the balance of their care could be given in an atmosphere radiating returning health instead of serious illness and possible death. Furthermore, this beneficent physical and mental change would be accomplished for the convalescent patient at a decrease in expense of one-half to two-thirds that involved in continued maintenance at the Burbank or any other acute hospital.

Continuing transfer of these convalescent patients to a country home would be equivalent to a 15 to 20 per cent. increase in the size of the present hospital. Would any other methods which can be suggested provide a similar increase in the percentage of beds available in the acute hospital, with as great ease or with as little expense to the benefactors from whom all medical work must derive its fundamental support?

Is it too much to hope that, after reflecting upon the situation, some wise Samaritan may feel inclined to try the experiment and donate to Fitchburg a group of farm or other suitable buildings well located and within the motor transportation limit of one hour from town, capable of maintaining some thirty to forty convalescent patients? Facts and figures are available to provide a close estimate of the cost of maintaining such a home. It should provide in the first year for the care of over four hundred

patients, both medical and surgical, of both sexes and all ages except young children, at a total gross cost for running expenses not in excess of \$20,000. This total gross expense should, however, be decreased by one-third or one-half through the receipt of fees from patients alone; it should be further decreased by the receipt of funds from the other sources of maintenance previously mentioned. All patients should themselves whenever possible pay something, even if only a few cents; but no routine patient should be allowed to pay more than two-thirds of his actual maintenance cost. Discipline is much more easily maintained under these circumstances than otherwise, and no convalescent home can fulfill its duty to its patients or hold their continued respect unless fundamental discipline is enforced.

Surely this convalescent experiment would be a worthwhile adventure in public health. Also, it would put Fitchburg at once in the front rank of cities of its size in Massachusetts with regard to convalescent care; and convalescent homes and convalescent care represent the coming fashion in preventive medicine and public health work.

It is perhaps safe to predict that before so very long there may even be a state organization for promoting convalescent care. We may then expect that such preventive work may tend to make less imperative the increase of homes for the incurable, and we may hope that it may tend to halt the increasing tide of deaths from the common diseases in early middle life, due among other things to an increasing tendency to pneumonia and heart failure on the part of our increasingly exhausted groups of half-cured patients,—those sad derelicts who represent the backwash of modern scientific medicine.

A workable outline for the economical statewide care of convalescence is not difficult to construct. It would depend upon having Convalescent Centers located throughout the state, in connection with the larger cities but taking patients from the smaller towns within a radius of say twenty miles from the location of each Convalescent Center. On this basis, there would be perhaps fifteen Convalescent Centers for Massachusetts, and Fitchburg would be the base of one such Center. This may sound fantastic. It would, however, be but a logical outgrowth of the proven proposition that it is more economical and more efficient to maintain convalescent patients in groups or colonies of one to five hundred each, than in the smaller now customary isolated groups of twenty to forty each.

For the development of such a program of Convalescent Centers, a basis exists in the idealized convalescent colony long since proposed by Dr. Moeck of Chicago. This Convalescent Center or Colony, based upon a larger city, would be in effect a cottage settlement with its own health, educational and amusement systems, where hundreds of slowly recovering surgical patients

might even succeed in financially supporting prolonged existence under conditions ideal for maximum recovery of earning power. But beyond this obvious work, such a center would also offer hope of health-progress and recovery of strength, not only to those suffering from the traumatic injuries of industrial warfare, but to those now neglected because less visibly though none the less actually crippled, convalescents from our never-ending warfare with disease.

SUMMARY.

1. Experience accumulated through the centuries, both in army and civilian life, demonstrates the wisdom and necessity for better private and community care of the convalescent patient; for today as in the past, the convalescent patient suffers from clinical neglect.

2. This clinical neglect is at least in some degree due to a failure on the part of the medical profession to take into consideration a time factor fundamental in all medicine. Thus, it is at least a psychological improbability that the practicing physician will ever focus simultaneously and with equal clearness upon two classes of cases which differ so greatly in their normal time schedules for physiological reactions, as do acute cases and chronic or convalescent cases.

In the acute cases, both medical and surgical, one may see death or immediate recovery from critical illness, and all the changes in between, passing in review within a period of ten days.

In the chronic or convalescent cases, on the other hand, the same series of changes may not be expected to occur in less periods of time than weeks, months or even years.

It is the physician who varies, not the average time factors in the two classes of cases under consideration. Therefore, it is scarcely logical to expect the chronics and the convalescents to receive optimum care until the physicians themselves alter their methods of meeting fixed conditions: one group of physicians must, as now, be trained to care for acute conditions; but a second group of physicians must in the future be trained to focus on the slower-moving procession of events which nature displays against the background of the chronic invalid. It is these latter, the chronic invalids, who today present the greatest challenge to physicians, precisely because the changes in chronic medicine are less obvious, less rapid, and proportionately more difficult of recognition.

The teaching in our medical schools is today so directed toward the critical and the obvious that it is often years after graduation before the physician learns through repeated failures, to probe into the mystery of that which is human in his patients through increased understanding of those lesser changes which characterize the fluctuations of poor health in the invalid.

It is to be hoped then, that one rational even if radical preliminary step toward the better care of convalescence may be made by admitting

the existence of that which always has existed and always will exist,—a differential time factor in medicine. Once this is conceded, special training for chronic medicine must follow, the invalid will turn his face less often than in the past away from the medical profession, and the convalescent patient will not longer be forced to remain in wards filled with the acutely ill, where he must inevitably be pushed toward the periphery of medical memory by the pressure of serious illness which, as is its right, claims precedence over all conditions less potentially fatal.

3. There can be no doubt that the medical profession is under suspicion of neglecting its duty and opportunity in regard to convalescence. Should further causes predisposing to this undesirable state of affairs be sought for, that very growth of our hospital system to which we point with such pride as evidence of our progress in the scientific medical care of the sick, might itself in part be found to blame. For it is at least conceivable that an inadequately defined division of responsibility for the care of the patient, as between the private practitioner and the hospital, would prove an important etiological factor.

Formerly, with hospitals looked upon as the unusual, the practitioner had perforce to assume in most instances the entire continuous responsibility for his patient. Now, with hospitals on every hand, it is the usual practice to send the very ill patient from the home to the hospital.

But this procedure of transfer of the patient from home to hospital, so desirable from other points of view, of necessity creates a break in that continuity of supervision and of responsibility which is so vital a factor in the patient's uninterrupted progress toward health. The hospital, in need of beds, may send the patient home too soon. The physician may feel that continuity of care would best be served if the hospital should return his patient to him not when recovery from illness has become a probability, but when it is a demonstrated fact—on the ancient principle that it is not desirable to swap horses in the middle of the stream. The patient, lost between these two points of view, may fail to recover properly or completely, and understanding only this glaring fact, may be forgiven if he seeks relief elsewhere, even at the hands of quacks and cults.

Both the physician and the hospital are right, and both are wrong. It is the responsibility of the hospital to see that the patient has arrived at a satisfactory stage in his progress toward health before he is turned back to the care of the physician, but there is a limit to such responsibility. Where does this limit come? Here is the crux of the whole situation.

Until some more final authority is available, we should do well to take our cue from Bridgman, and determine with him that the responsibility of the hospital for the average patient who has been sick enough to require the average

stay of three weeks in an acute hospital, does not cease until such a patient has been given an additional average of three weeks of skilled care in a well-organized convalescent home. Then only can the hospital say with confidence and some assurance of truth, that its work is finished and its responsibility fulfilled; and that all responsibility for the patient's future welfare should therefore, from the date of discharge from hospital be assumed by the private practitioner who originally sent the patient to hospital for the relief of acute and serious illness. Under some such clear-cut division of responsibility the physician would less often face the care of a half-cured patient, and the patient, freed from the double fear of exhaustion and relapse, could look forward more confidently to that fully regained earning power which after all is the only true test of complete recovery from previous illness.

4. Convalescent care when properly applied hastens and completes recovery of the patient, frees acute hospital beds for their proper use, saves money to the community, and saves the medical profession from the now too frequently justifiable reproach of clinical neglect of the convalescent patient.

5. Convalescent care may be applied within an acute hospital, through an outpatient department, in the home of the patient, and in an organized convalescent home. For obvious reasons, most convalescence will always take place in the home of the patient, but convalescent care is most efficiently applied through the medium of a well-organized country convalescent home of not less than thirty to forty beds in size. Maximum economy is only obtained when the convalescent home is of one hundred beds or over, in size. Such a home can with advantage care for patients of all ages and both sexes under one organization, at a daily cost not in excess of \$2.00 per capita. Medically, such a home yields good results, twelve months in the year, not only to the usual medical and surgical cases, but also to such borderline cases as the mildly psychiatric.

6. Maximum efficiency in such a home results only when Medical, Occupational Therapy, Physiotherapy, and Social Service factors work harmoniously together under the direction of a physician skilled in convalescent methods; one who does not assume responsibility for patients acutely ill, and who must in all matters of medical policy be independent of those in control of the acute medical and surgical services of the general hospitals.

7. Adequate facts and figures are easily available to guarantee effective progress at a reasonable cost, for all convalescent work seriously undertaken for the purpose of eliminating clinical neglect of the convalescent patient—a neglect which is the last remaining serious gap in our public health cycle.

8. Unbiased consideration can inevitably lead but to this one conclusion: that no valid

objection exists for longer acquiescing in an inertia which paralyzes hope of progress in this important field of preventive medicine, one in which convalescent homes present the only rational alternative to an increase in homes for the incurable.

9. At the risk of being considered visionary, one may at least anticipate the development of a future state-wide organization which will have as its objective, the efficient application of available proven modern methods to the problem of caring for convalescent patients in such a responsible and satisfactory manner as to make impossible in the future, the present-day too justifiable reproach that the medical profession neglects its duty and opportunity in regard to convalescence; and in such a manner that eventually the gap through which the cults now stream to feast upon the too frequent half-cured product of our modern hospital system, shall cease to exist for the final reason that the patient will be too content with trained medical supervision, for it even to occur to him that he could find elsewhere to better advantage that which it is his right to seek,—recovered health and earning power.

An organization such as that anticipated could to advantage operate through the medium of large country Convalescent Centers which, though based upon the larger cities, would be available to patients from the smaller towns within a motor transport radius of twenty miles from each such Convalescent Center.

CONCLUSIONS.

1. The convalescent patient today suffers from clinical neglect.

2. The convalescent patient will continue to suffer from clinical neglect until it is realized that in addition to disease factors there are fundamental and unchanging time factors in medicine. These time factors make it as psychologically improbable that the practicing physician will ever be able to focus simultaneously upon acute and chronic medicine as that the mariner will ever be able to get maximum simultaneous binocular vision through a pair of marine glasses, one eye piece of which is adjusted for near vision, while the other eye piece is adjusted for far vision. One solution presenting, is the recognition of time factors in medicine, with a resultant education of two groups of medical workers. The first group should be concerned with acute, and the second group with chronic medicine.

3. The clinical neglect above referred to may also be due at least in part to an inadequately defined responsibility for the care of the patient, as between the private practitioner and the general hospital. We conclude with Bridgman that the responsibility of the general hospital should not cease until this hospital has provided for its average patient who was sick enough to require the average of three weeks in the acute

hospital, an additional average stay of three weeks in a modern convalescent home. Thereafter, the private practitioner could resume complete responsibility for the care of his patient, with some assurance that as a result of its specialized facilities the general hospital had accomplished for his patient three definite results: firstly, it had guided him through the phase of possible sudden death; secondly, it had guided him through the phase of frequent immediate relapse; thirdly, it had during the second phase in convalescent home, so hardened the patient both mentally and physically as to make it possible that he could without fear of subsequent relapse take up again immediately after his arrival at home, full-time productive work in shop or office. Such a system would make it possible for both patient and physician to cross off the mental slate entirely, the serious illness for the better care of which the physician originally sent his patient to hospital.

A clear cut apportionment of responsibility such as that just outlined could not but work to the ultimate advantage of the hospital, the physician, the community, and last but not least, the patient himself. It would in the truest sense further the cause of preventive medicine and the public health.

4. Adequate utilization of the possibilities of a modern well organized country convalescent home offers what is today the best answer which the medical profession can make to the increasingly frequent question from the laity,—“What are you going to do about better care for the convalescent patient?”

PELLAGRA IN MASSACHUSETTS.

BY GEORGE CHEEVER SHATTUCK, M.D., BOSTON.

[From the Service for Tropical Diseases of the Boston City Hospital.]

INTRODUCTION.

It seems unnecessary to review the early history of pellagra in Massachusetts, because this has already been well done by Macdonald¹. A few points, however, are worthy of emphasis. The first case recognized in Massachusetts was reported by Tyler², in 1864.

The attention of the medical profession of the country was drawn to the disease by Searcy³, of Alabama in 1907 and by Babcock⁴, of South Carolina in 1908. In 1910 and in succeeding years a few cases were reported in Massachusetts. (References 5, 6, 7, 8, 9, 10, 11.)

On May 7, 1914, pellagra was listed among the reportable diseases for this State. No useful figures as to the prevalence of pellagra in Massachusetts prior to 1914 are available.

The work in hand was undertaken because a preliminary survey by Shattuck⁵, of tropical diseases in Massachusetts had shown that pella-

TABLE I.

Year of Diagnosis	Hospital Records			State Health Department Records		
	All Hospital Cases	Hospital Deaths	Percentage of deaths to cases	Cases	Deaths	Death rate per 100,000
1906	1	0		0	0	
1907	0	0		0	0	
1908	1	0		0	0	
1909	0	0		0	1	
1910	0	0		0	1	
1911	2	1	50	0	1	
1912	3	1	33-1/3	0	5	
1913	8	5	62.5	2	11	
1914	9	7	77.7	10	18	
1915	21	13	61.9	33	26	0.9
1916	25	19	76.	47	37	1.2
1917	19	9	47.3	29	20	0.8
1918	10	7	70.	19	22	0.5
1919	15	7	46.6	13	15	0.3
1920	7	5	71.4	15	14	0.4
1921	11	10	90.9	14	14	0.4
	132	84	63.6	182	185	

N. B. The State and Hospital totals cannot be added without causing a great deal of duplication.

The death rate for the State of Massachusetts from all causes per 1000 population for the year 1920 was 13.8.

gra is far more common here than was anticipated and because more information was wanted in regard to this disease.

DATA

The data upon which this paper is based have been obtained from the published records of the Massachusetts State Department of Health from 1913 to 1921 inclusive and from 16 institutions in Massachusetts including four general hospitals in the City of Boston, eight State Hospitals for the Insane, two State Schools for the Feeble-Minded, the State Infirmary and the City Infirmary for the Poor. The data collected from the institutions cover the period from 1906 to 1922 inclusive.

Cases in which the diagnosis of pellagra remained in doubt are not included in the figures.

ANALYSIS OF STATE RECORDS.

The number of cases reported to the State Department of Health, as shown in Table I, reached

its maximum in 1916 and the disease seems to have been unusually prevalent in 1915, 1917 and 1918 as well. It seems likely that these figures represent an actual increase of the disease, and that the increase was due probably to the high prices, and relative scarcity of food, caused by

TABLE II.

Number of Deaths from Pellagra in Registration Area (exclusive of Hawaii).

Year	Deaths	Death rate per 100,000 estimated population for the registration area
1911	569	1.1
1912	674	1.1
1913	1015	1.6
1914	1550	2.3
1915	2843	4.2
1916	2390	3.4
1917	3666	4.9
1918	3741	4.6
1919	2806	3.3
1920	2322	2.7

TABLE III.

Residence.

Counties	Number of Hospital Cases		Density of Population per Square Mile, 1915	
			Population	Families
Suffolk	37	87	15,512.2	3,354.5
Middlesex	29	cases	893.6	202.0
Essex	21	68%	929.6	211.7
Worcester	12		284.2	62.8
Hampden	9		422.4	91.5
Hampshire	7		120.5	25.9
Plymouth	4		237.3	58.0
Norfolk	2		506.2	115.3
Berkshire	2		122.8	27.8
Barstable	1		73.1	21.0
Bristol	1		625.8	137.9
Franklin	1		70.1	16.9
Dukes	0		46.4	13.6
Nantucket	0		64.0	19.2

the World War. The incidence of the disease in subsequent years shows a sudden decline.

Figures for the Registration Area (Table II) show a marked increase of deaths from pellagra in the United States in 1917 and 1918, and a subsequent decline. The parallelism between the statistical records for Massachusetts and those for the Registration Area is striking but the years do not synchronize. The figures for Massachusetts, however, are based upon cases diagnosed, whereas those for the Registration Area are based upon deaths.

ANALYSIS OF HOSPITAL CASES.

Residence. Of the 132 hospital cases, 126 claimed residence in Massachusetts. The figures of residence by counties are shown in Table III.

Reference to the figures and map (page 114) shows that pellagra is far more common in the eastern and northeastern parts of the State. This section embraces a large proportion of the urban and industrial population. The 37 cases for Suffolk County were all residents of Boston. Of the 126 cases which gave a town in Massachusetts as their residence, only 9 came from rural communities of 2,500 population or less.

The widest parallelism between the number of cases of pellagra and density of population may or may not indicate a causal relationship. The total number of cases is too small to warrant an exact numerical comparison between urban and rural communities as regards incidence of pellagra in this State.

TABLE IV:

Place	BIRTHPLACE.	Number of Cases
Massachusetts	63
Other New England States	19
New York	3
South Carolina	1
Canada	17
Ireland	12
Eight other foreign countries	13
Not stated	4
		132

Thus the native-born number 86 or 65 per cent., those for New England 82 or 61 per cent., those for Massachusetts 63 or 46.9 per cent., and the foreign-born 42 or 31.8 per cent.

Color.—Only 3 patients were colored.

Sex.—There were 87 females and 45 males. (Diagram A, page 114.)

Age.—The disease was most prevalent in the decade of life between 40 and 50. See Diagram A.

The absence of cases between the ages of 11 and 20 corresponds with a marked drop in the age-frequency curve published in the Progress Report of the Thompson-McFadden Commission¹², which did its work in Spartanburg County, South Carolina. Their diagram, unlike Diagram A, shows its peak between the ages of 24 and 35 instead of between the 40th and 50th years.

TABLE V.

OCCUPATIONS: 128 CASES BY SEXES.

Females.

Occupation	Number of Cases
Housework	51
Factory, or mill operative	9
Social worker	2
School pupil	2
School teacher	1
Storekeeper	1
Canvasser	1
Massense	1
Nurse	1
Waitress	1
No occupation	16
	86

Males.

Occupation	Number of Cases
Unskilled Workers.	
Farm-hand or laborer	12
Teamster	4
Expressman	1
Hostler	1
Laundryman	1
Watchman	1
	20

Skilled Workers.

Factory, or mill operative	2
Plumber	2
Stone cutter	1
Tinsmith	1
Mason	1
Leather worker	1
Blacksmith	1
Carpenter	1
Shoemaker	1
	11

Other Occupations.

Sea captain	1
Photographer	1
Clerk	1
Storekeeper	1
No occupation	4
	7
	42

The 128 cases in which the occupation was known (as classified in Table V by sex and occupation), is too small a number to form a basis for final conclusions. The marked predominance of cases in the female sex has already been shown in Diagram A.

The size of the figure for housework in the column of occupations of female patients probably results merely from the fact that the great majority of women are so employed. The figure for factory and mill-operatives probably stands out for a similar reason. The third outstanding figure, namely 16 cases in women without occupation, shows on further analysis that of these women three were under institutional

care for feeble-mindedness. The following inferences seem justified: (1) that no particular occupation of women seems markedly to increase the liability to pellagra; and (2) that the disease has appeared in women engaged in widely different occupations.

The occupations of male pellagrins are even more various than those of the women. The occupations have been somewhat arbitrarily classified as unskilled, skilled, etc. The numerical predominance of the disease among unskilled workers and particularly among farm-hands and laborers is probably not greater than the numerical predominance of individuals so employed in State at large.

Of the seven men without employment, five were imbeciles.

The conclusions which may be drawn are: (1) that in the group of cases men engaged in a great variety of occupations have developed pellagra; (2) that the group includes manual laborers, both skilled and unskilled, as well as a small number of cases among individuals of presumably higher mental attainments; and (3) that the disease in Massachusetts is by no means confined to laborers or to factory and mill-operatives.

Nevertheless, the cases in farm-hands, laborers, factory and mill-operatives, taken together, number 14 or about one-third of the classifiable cases in males.

Table VI clearly shows that pellagra in Massachusetts is far from being confined to institutions for the insane or to hospitals for chronic disease. The fact that the Massachusetts General Hospital treats cases of acute disease and rarely retains a patient in its wards for more than a few weeks, and the further fact that it draws its patients directly from the community, prove conclusively that pellagra develops frequently in the home.

Consequently, it seems likely that a considera-

ble proportion of cases of pellagra found in hospitals for the insane have developed the disease before admission to these hospitals and, further, that the psychoses causing their admission to these institutions, in many instances, are manifestations of pellagra.

Moreover, there are those who believe that the dietary caprices commonly exhibited by insane patients often result in an ill-balanced and deficient dietary and that insanity may thus play a part in the causation of pellagra indirectly.

No inference derogatory to the management of the State Institutions in which pellagra has been relatively often diagnosed would be justifiable because in 1915 the Massachusetts State Department of Health¹³ reported that these institutions were providing a satisfactory dietary.

The seasonal incidence of the hospital cases by months is shown in Diagram B (page 114). The onset of the disease, for purposes of the diagram, is based on the time of appearance of the skin lesions as nearly as this could be determined from the hospital records. The same principle was followed in the Thompson-McFadden Progress Report¹². It is generally believed that pellagra cases develop in greatest numbers in the spring, that they decrease in mid-summer and that there is a second, but less marked increase of cases, in the autumn. The diagrams of the above-mentioned Commission show a rapid vernal increase of cases in Spartanburg County, South Carolina, reaching the peak in the month of June. There follows an even more rapid decline in the number of new cases until October, after which time few cases occur until the succeeding spring.

Diagram B likewise shows no autumnal increase of cases. The curve differs from those of the Commission in that the peak comes in July instead of June, and that the increase of cases in the spring and their decrease after July is

TABLE VI.

DISTRIBUTION OF CASES BY INSTITUTIONS.				
Institutions		Cases	County	
Large General Hospitals in Boston	4	Massachusetts General Hospital.....	28	Suffolk
		Peter Bent Brigham Hospital.....	11	"
		Boston City Hospital.....	7	"
		Carney Hospital.....	1	47
State Hospitals for the Insane	8	Danvers.....	28	Essex
		Northampton.....	18	Hampshire
		Worcester.....	6	Worcester
		Boston State.....	6	Suffolk
		Westboro.....	3	Worcester
		Boston Psychopathic.....	3	Suffolk
		Taunton.....	3	Bristol
		Foxboro.....	2	69
State Schools for Feeble-minded	2	Massachusetts State School.....	4	Middlesex
		Wrentham State School.....	2	Norfolk
Tewksbury Infirmary	2	(State poor).....	10	Middlesex
Long Island Infirmary		(Boston poor).....	0	Suffolk
16		132		

MAP SHOWING DISTRIBUTION OF PELLAGRA PATIENTS CLAIMING RESIDENCE IN MASSACHUSETTS. (SEE TABLE III.)

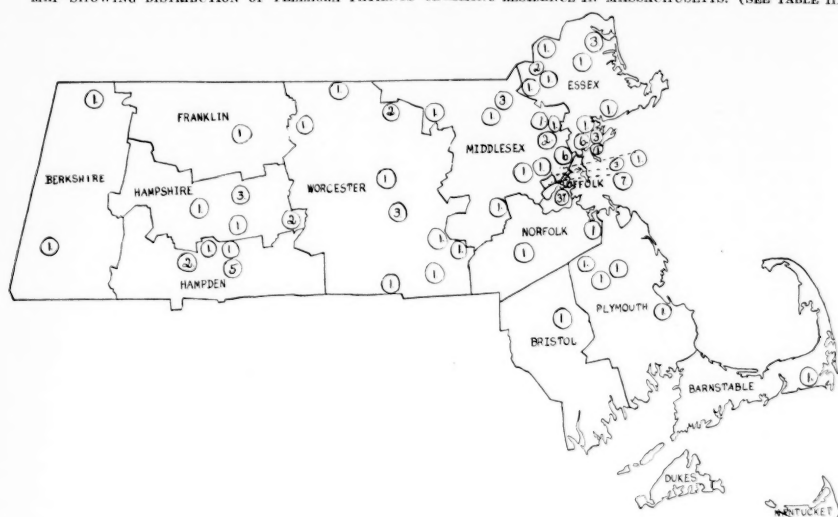


Diagram A

Incidence of Pellagra by Sex and Age by Sex-100 Cases

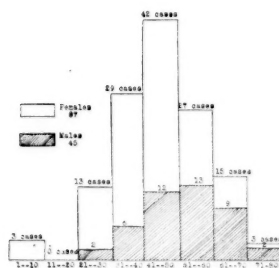
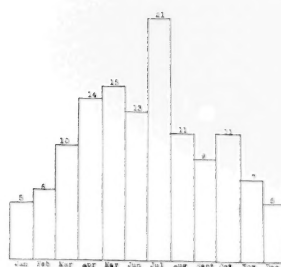


Diagram B

Count of Pellagra by Age Group-100 Cases



more gradual. The fact that the spring comes in South Carolina about a month before it comes in Massachusetts, would seem to account for the fact that most cases develop there in June and here in July.

SUMMARY.

1. The number of cases of pellagra found in State and hospital records shows that pellagra is by no means rare in Massachusetts.
2. Pellagra has been reported from nearly all the counties of the State. The exceptions are Dukes (Martha's Vineyard) and Nantucket, in both of which counties the population is very small.
3. That most of the pellagra in Massachusetts originates within the State is shown by the

fact that the great majority of cases developed in residents of the State and in the native-born.

4. A very large proportion of patients resided in the counties of Suffolk, Middlesex or Essex. Many of these patients were residents of Boston or vicinity.

5. In this State, pellagra is most common where population is densest. The mill-towns show no disproportionate number of cases.

6. In Massachusetts women have been affected in much larger proportions than have men.

7. The occupations of both male and female pellagrins have been studied. Among females, housework markedly predominated and among males the largest group of cases developed among unskilled laborers of various kinds. These facts seem to align themselves with the predominance of housework as an occupation for women on the

one hand, and of unskilled labor for men on the other hand. Individuals engaged in a great variety of occupations have developed the disease. Consequently, the observations do not indicate an association of liability to pellagra with any special occupation.

8. Pellagra in Massachusetts is by no means confined to institutions for the insane. It is believed that cases tend to be found in asylums, firstly, because mental derangement is a common symptom of the disease and, secondly, because patients admitted for pre-existing mental derangement often have dietary caprices which might favor the development of pellagra.

9. The skin lesions of pellagra in Massachusetts most often appear in July but, apparently, they may develop for the first time in any month of the year.

ACKNOWLEDGMENT.

Grateful thanks are hereby extended to the authorities of the hospitals and other institutions listed below for kind permission to examine their records and to publish the desired data. Without their effective co-operation this investigation would have been useless.

Boston City Hospital.
Boston Psychopathic Hospital.
Boston State Hospital.
Carney Hospital.
Danvers State Hospital.
Foxborough State Hospital.
Long Island Hospital.
Massachusetts General Hospital.
Massachusetts State School for the Feeble-Minded.
Northampton State Hospital.
Peter Bent Brigham Hospital.
Taunton State Hospital.
Tewksbury State Infirmary.
Westborough State Hospital.
Worcester State Hospital.
Wrentham State School.

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- 1 Macdonald: BOSTON MED. AND SURG. JOUR., Vol. clxix, No. 16, p. 267, 1913.
- 2 Tyler: Amer. Jour. of Insanity, Vol. xxi, p. 115, 1864.
- 3 Seary: Jour. Am. Med. Assn., Vol. xlix, 37, 1907.
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- 8 Lee: *Ibid.*, Vol. clxvii, p. 435, 1912.
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- b Brown, W. H.: Mass. Pub. Health Bull., Aug., 1915, Vol. ii, No. 7.
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- e Monthly Bull. Health Dept. City of Boston, Oct., 1919, p. 124.
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- g Bigland, A. D.: A critical review of the literature since 1914, Trop. Dis. Bull., Vol. xix, No. 6, July, 1922, p. 451.
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Book Review.

Regional Anesthesia: Its Technic and Clinical Application. By GASTON LABAT, M.D., Lecturer on Regional Anesthesia at the New York University; Laureate of the Faculty of Sciences, University of Montpellier; Laureate of the Faculty of Medicine, University of Paris; formerly Special Lecturer on Regional Anesthesia, the Mayo Foundation, University of Minnesota. With a foreword by WILLIAM J. Mayo, M.D. Octavo of 496 pages with 315 original illustrations. Philadelphia and London: W. B. Saunders Company. 1922.

After the publication of the excellent volumes on local anesthesia by Braun and also by Allen, the appearance of a similar work on local anesthesia would at first appear unnecessary, but this excellent volume by Labat is so thorough and so painstakingly written and contains so many very excellent illustrations that it undoubtedly exceeds both of these former books in value; certainly it is a most valuable supplement.

Perhaps one of the best chapters is on the blocking of the cranial nerves. The anatomical drawings and the illustrations of the exact points at which the needle must be placed are made extremely clear. The combination of drawings showing relative positions of nerves and those describing the exact technic are of especial value.

The book also describes more extensive operative procedures made possible by the work of this author than any previous book.

Chapter IV, devoted to operations on the head, is probably the most painstakingly presented and most valuable. The chapter on genito-urinary and rectal operations also advances the technic to a considerable degree. A chapter is devoted to intra-spinal block, or spinal anesthesia, also chapters on presacral block and caudal block.

This work is characterized by its excellent illustrations and its painstaking description and devotion to detail.

IMMUNIZATION OF DOGS AGAINST RABIES.—The state of California has begun a crusade against rabies. An attempt will be made to secure a law which will provide that immunized dogs may go at large without muzzle or chain.

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Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

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THE INDIGENT PATIENT.

ONE of the insistent problems of medical practice is the implied or definite claim for modification of a physician's fees.

Probably few more important and vexatious questions are regularly presented to the active practitioner, and the methods of disposal of such annoyances vary according to the habits of the individual doctor. Some shift the burden to agents, some are content to render bills without a systematic follow-up system, and a few regard the details of business methods as too bothersome and unproductive to warrant the expenditure of much effort in attempts at enforcing payment. Comparatively few physicians are careful business men, for the nature of their calling demands so much physical and mental concentration that in the absence of pressing demands of patients, relaxation and diversion are more appealing than contest over accounts. The doctor with a small practice, on the other hand, is often fearful that the antagonism engendered by insistence on meeting financial obligations may convert a lukewarm friend into a dangerous enemy, so far as public support may be influenced by such a person.

The Medical Society of California has taken much interest in this phase of the physician's burdens and has tried to help, by adopting a scheme for a "Social and Economic Record"

to be kept by physicians. Blanks are provided on which, under appropriate headings, the financial history and present economic condition of any person asking for special consideration may be recorded together with living expenses, dependents and other financial obligations.

Since this plan has been elaborated and endorsed by a state medical society it can be used by its members in dealing with patients. It is an admirable scheme for it gives to every member the support of the profession and must create in the mind of an irresponsible or designing patient respect for the honest claims of a doctor.

If every state society would adopt this method both the profession and the patients would be benefited. The doctor will feel that his interests are being protected and patients will be led to feel that physicians are not the easy marks which they are so often regarded.

SMALLPOX.

There is widespread apprehension among public health authorities relating to smallpox. In London the disease has been of a virulent type. Several recent epidemics in this country have also been of a severe type. In one series in London the mortality was 33 per cent. Many of these cases have been confluent.

In the beginning of epidemics the disease is sometimes regarded as chicken-pox by an attending physician. Many doctors in active practice have never seen a case of smallpox and have not taken time to fix the diagnostic features in mind. The prodromal stage, the location and character of the eruption and its subsequent development should make the diagnosis easy for one who will take pains to have the facts clearly in mind.

The safest course is to ask for expert advice in any doubtful case. A severe case of variola or mild case of varioloid may offer obscure diagnostic symptoms. Malignant smallpox may suggest scarlet fever, measles or purpura due to hemolytic process following the invasion of some severe infections. Everyone should remember that one case of smallpox may in addition to its danger to life impose a heavy financial burden on a community.

News Notes.

MASSACHUSETTS GENERAL HOSPITAL.—The Fortnightly Clinical Conference of the medical staff was held in the Cardiac Clinic Room, Out-Patient Department, at noon Tuesday, January 16, 1923. Cases were presented for discussion. These conferences will be held on the first and second Tuesdays of each month.

DEATH RATE IN BOSTON.—During the week ending January 13, 1923, the number of deaths reported was 265, against 222 last year, with a rate of 17.88. There were 33 deaths under one year of age, against 20 last year. The number of cases of principal reportable diseases were: Diphtheria, 75; scarlet fever, 56; measles, 53; whooping cough, 76; tuberculosis, 38. Included in the above were the following cases of non-residents: Diphtheria, 4; scarlet fever, 6; tuberculosis, 4. Total deaths from these diseases were: Diphtheria, 7; measles, 1; whooping cough, 2; tuberculosis, 10. Included in the above were the following cases of non-residents: Diphtheria, 2; whooping cough, 1; tuberculosis, 2.

SHARON HOSPITAL BEQUEST.—In addition to bequests in favor of the Sharon Sanatorium previously mentioned, another, one of \$5000, under the will of Arthur F. Estabrook will soon be available.

GODDARD HOSPITAL, BROCKTON.—A Staff Clinical Meeting was held Tuesday, January 23, at 8 P.M. A "Symposium on Obstetrics" was given by the staff members. Open discussion followed.

G. L. FULLER, *Secretary*.

BOSTON UNIVERSITY SCHOOL OF MEDICINE.—Dr. Allan Winter Rowe, Professor of Chemistry, delivered three papers recently before the American Society of Pharmacology and Experimental Therapeutics and the American Society of Biological Chemists on the following: "Metabolism of Galactose and Threshold of Tolerance in Normal Individuals," "Impurities in Anesthetic Ether," "Studies on Metabolism in Pharmacology and Changes in the Tension of Alveolar Carbon Dioxide." Dr. Walter L. Mendenhall, Professor of Pharmacology, delivered one paper before the American Society of Pharmacology and Experimental Therapeutics on "Pharmacological Effects of the Impurities in Ether." These meetings were held at Toronto. Dr. Pratt, Professor of Physiology, on Tuesday last gave an informal talk to a physiological group at Harvard Medical School at which he demonstrated a newly adapted device for artificial respiration and reviewed some work recently published from Tokyo on muscle excitability, with a discussion of the bearing of this and other work on the theory of nerve-ending fatigue.

CONTRIBUTIONS DESIRED BY RUSSIAN RELIEF.—The Russian Unit of the American Relief Administration would be pleased to receive contributions of the following numbers of this JOURNAL: Vol. 174, Nos. 3, 25; Vol. 175, Nos. 1, 19, 25; Vol. 176, No. 7, Vol. 177. These should be addressed as follows: Institute of Experimental Medicine in Petrograd, care A. R. A.

District Physician Petrograd, 67 Eaton Square, S.W.I., London.

ERRATA.—Some of the JOURNALS were sent out with the date January 18, 1922, on the title page. Please change the date to 1923.

WORCESTER NORTH DISTRICT MEDICAL SOCIETY.—The third quarterly meeting was held at Hotel Raymond, Tuesday, January 23, at 4:30 p.m. Ten-minute papers were read by Dr. H. D. Bone of Gardner, "Observations of a Few Local and Constitutional Conditions Referable to Diseased Tonsils and Adenoids"; Dr. L. O. Farrar of the Gardner State Colony, "What the General Practitioner Can Do for the Mental Hygiene Clinic." Dr. C. Morton Smith, Professor of Syphilology of Harvard Medical School, discussed "Syphilis Problems."

Obituaries.

ROBERT THAXTER EDES, M. D.

Dr. Robert T. Edes, a retired member of the Massachusetts Medical Society, formerly professor of materia medica and Jackson professor of clinical medicine in Harvard Medical School, died at the home of his daughter, Mrs. Annie Gardner, in Springfield, January 12, 1923, at the age of eighty-four years.

The son of Richard Sullivan Edes, a prominent Unitarian clergyman, he was seventh in descent from John Edes, who came from England to Charlestown, Mass., about 1674. Dr. Edes, the eldest of eight brothers and sisters, was born in Eastport, Me., September 23, 1838, spent his early life in Dorchester and Bolton, where his father was settled, graduated from Harvard in the academic class of 1858, and in medicine in 1861. In the September following graduation he entered the United States navy and served during the duration of the war, holding the rank of passed assistant surgeon when he resigned in 1865. In April, 1862, he was stationed in the naval hospital aboard the Brooklyn and was present at the bombardment by the mortar flotilla of forts Jackson and St. Philip below New Orleans.

After taking an extended tour of study in Europe he practised medicine in Hingham and Roxbury, occupying the chairs of materia medica (1875-1884) and clinical medicine (1884-1886) in Harvard Medical School, and serving as visiting physician in the department of nervous and renal diseases at Boston City Hospital. His students found him a scholarly and erudite instructor, his differential diagnoses being models of accuracy and thoroughness. In 1886 he moved to Washington, D. C., where he was visiting physician to Garfield Memorial Hospital, returning to Boston in 1891 to accept the position of resident physician to Adams Nervine

Asylum in Jamaica Plain. When he had finished six years' service to this institution he received a few private cases of nervous and mental disease in his house in that suburb while he was visiting physician to the Highland Spring Sanatorium in Nashua, N. H., keeping an office in Boston. About 1903 he moved to Reading, Mass., and opened a small private hospital for nervous diseases.

Dr. Edes' name was placed on the retired list of the Massachusetts Medical Society in 1912, and in 1915 he moved to Springfield to pass the rest of his days. Although handicapped by increasing deafness he wrote for the papers and magazines and was active minded until the last. His literary career began in 1868 when he wrote for Pepper's "System of Medicine," an article on "The Part taken by Nature and Time in the Cure of Diseases," which had been one of the prize essays of the State Medical Society for that year. Subsequently he wrote for medical periodical literature thirteen articles on brain tumors, five on anemia and allied conditions, five on abdominal cancer, eleven on diseases of the kidneys, and ten on diseases and conditions of the nervous system. The Shattuck Lecture of the Massachusetts Medical Society, in the year 1895, with the title "The New England Invalid," was delivered by Dr. Edes. He was the author of "Therapeutic Handbook of the United States Pharmacopoeia," 1883; "Therapeutics and Materia Medica," 1887; "Parson Gay's Three Sermons" and also "The Mortar Flotilla of the United States Navy." In later years he furnished occasional papers for the BOSTON MEDICAL AND SURGICAL JOURNAL, for naval historical journals, and for the Springfield daily papers.

Dr. Edes was a member of the American Neurological Association, the Association of American Physicians, the Philosophical Society, Washington, the Boston Society for Medical Improvement, the Boston Medical Library, the American Medical Association, a fellow of the American Academy of Arts and Sciences, and a companion of the Military Order of the Loyal Legion. At various times he was lecturer on materia medica and therapeutics at Dartmouth Medical School, lecturer on nervous diseases at Columbian University, Washington, and on diseases of the kidneys at Georgetown University.

Dr. Edes was twice married, first to Elizabeth T. Clarke, of Boston, in 1867, by whom he had three daughters and a son; and second; to Anna C. Richardson, of Dorchester, Mass., in 1881. She died in 1921. The son, Richard Edward Edes, a graduate in arts of Johns Hopkins University (1889), and of Harvard Medical School in the class of 1895, a most promising practitioner in Roxbury, died November 25, 1901, at the age of thirty-two, his death causing an abiding sorrow to his father and to a large circle of friends.

ARTHUR HOWARD NICHOLS, M.D.

Dr. Arthur H. Nichols, a prominent practitioner of Boston for many years, died suddenly of heart disease while visiting some property in Roxbury, on January 9, 1923. He was born in Boston, September 9, 1840, and therefore was eighty-two years old. His name was placed on the retired list of the Massachusetts Medical Society so long ago as 1911, when he had been an active fellow for forty-one years. He was the son of John Perkins and Mary Ann Clarke Nichols, being a descendant of Richard Nichols of Ipswich. Graduating from the Boston Latin School he entered Harvard, taking his A. B. in 1862, and serving the class as secretary. Entering Harvard Medical School he was house officer at the Massachusetts General Hospital, took his M. D. in 1866, and went abroad to study, settling in his native city in 1868. In 1872 he wrote for the Reports of the Massachusetts State Board of Health a paper on "The Effects on Health of the Use of Sewerage Machines," and "Outbreaks of Intestinal Disorders Attributable to the Contamination of Drinking Water by Impure Ice."

For many years Dr. Nichols represented the Boston Elevated Railway as an expert in its court cases. He was always a good friend of the Boston Medical Library and engaged in the discussion of the most available site for a new building in the years immediately following 1896. He travelled a good deal, visiting Europe several times, and also Cuba and Porto Rico. A summer home was maintained of late years at Cornish, N. H., while in the winter 55 Mt. Vernon Street was his home.

On November 11, 1869, Dr. Nichols married Elizabeth Fisher Homer of Roxbury. She survives him as do three children, Miss Rose Standish Nichols, Miss Marian Clarke Nichols, and Mrs. Arthur A. Shurtleff (Margaret Homer Nichols) of 66 Mt. Vernon Street, whose husband is one of the prominent landscape architects of Boston.

Dr. Nichols was a member of the Massachusetts Medical Society, the American Medical Association, the Bostonian Society, and the New England Historic-Genealogical Society. He also had belonged to the Ancient Society of College Youths of London, England, and he had been associated with the Three London Ringing Guilds.

Dr. Nichols' tall figure and kindly presence will be missed from the streets of Boston where he was so well known.

RESOLUTIONS

ON THE DEATH OF DR. HORATIO R. STORER.

ADOPTED AT THE ANNUAL MEETING OF THE BOSTON MEDICAL LIBRARY, JANUARY 9, 1923.

In the death of Dr. Horatio R. Storer, on September 18, 1923, in his ninety-third year,

the Boston Medical Library loses one of its best friends and most constant benefactors. His gift of the Storer Memorial Collection of Medical Medals on October 11, 1900, with his numerous subsequent additions, makes the Library the possessor of one of the largest and most valuable collections of medical medals in the world. His other gifts, probably known to but few, have been many and of much importance. Although for many years his eyesight had been so poor that it was extremely difficult for him to read even with a strong lens, he consulted catalogues, indexes, bibliographies, in fact anything that came to his notice, to see if he could find something unusual to send to the Library. Every few weeks your Librarian received from him a letter, in his own handwriting, containing clippings from catalogues, bibliographical data and references, generally from out-of-the-way sources, which would otherwise have escaped our notice. On his table at the time of his death was a package of pamphlets addressed to the Library in his own writing. His recollections of medical men and literature were keener at ninety than are those of most men at sixty,—truly a wonderful retention of mental acuteness, and of this the Library had the benefit.

In recognition of what he did for the Library throughout the many years of his long life, the Library desires to testify to its grateful appreciation of his generous services to itself and the medical profession.

ERNEST BOYEN YOUNG, M.D.

THE medical profession in and about Boston and the alumni of Bowdoin College have been much shocked by the sudden death by pneumonia of Dr. Ernest B. Young, of Boston, on January 17, 1923, at the age of fifty-three, after an illness of only three days.

The son of Stephen Jewett Young, of the Bowdoin Class of 1859, professor of modern languages, treasurer and trustee of the college, and his wife, Mary Emerson, he was born at Brunswick, Maine, July 11, 1869, and graduated A.B. at Bowdoin in 1892. After four years in the Harvard Medical School and a service as house officer at the Children's Hospital and at the Massachusetts General Hospital, he settled in Boston, devoting himself chiefly to the practice of gynecology and obstetrics. From the time of graduation from the school in 1896 he was assistant in anatomy, finally relinquishing this position in 1902 when he became assistant in gynecology. In 1908 he was made instructor in gynecology at Harvard, retaining the position until his death. He early had a place on the gynecological service of the Boston City Hospital as assistant visiting physician, and at different times he was assistant surgeon to the

Free Hospital for Women, assistant physician to the diseases of women at the Boston Dispensary and surgeon to the Massachusetts Women's Hospital. At the time of his death he was surgeon-in-chief, Gynecological and Obstetrical Section, Fifth Surgical Service, Boston City Hospital. Following 1909 Dr. Young was an overseer of Bowdoin and was always much interested in the college and its affairs. He wrote much for the medical journals on topics related to gynecology and obstetrics and held membership in the American Gynecological Society, the American Medical Association, the Massachusetts Medical Society, the Obstetrical Society of Boston, the Boston Medical Library and the Psi Upsilon fraternity.

He was a man of refined and cultured tastes, as is shown by his large and unusual collection of medical prints and his library containing many volumes of the classics of medicine. He was an enthusiastic member of the Boston Medical Library and a vice-president for four years. To Dr. J. R. Chadwick, the librarian, he rendered much needed assistance twenty years ago in helping to arrange a great mass of material which came to the Library soon after moving to the present building; and after Dr. Chadwick's death he was one of the most active members of the committee having in charge the selection of a suitable memorial to him, the bronze memorial tablet in Holmes Hall being one of the results of Dr. Young's prominent work on the committee.

In 1900 Dr. Young was married to Grace A. Simonton, of Rockland, Me. Their only child, Ernest S. Young, is now a senior in Harvard College.

THE LATE ERNEST BOYEN YOUNG.

AN APPRECIATION.

WITH the death, on Wednesday last, of Dr. Young, there passed, in the plenitude of his professional powers, an admirable type of medical man—quiet, unassuming, able. Among his ancestors was Thomas Dudley, one of the early governors of Maine. His father, an accomplished linguist, was for many years professor of modern languages at Bowdoin College.

Dr. Young was born in an atmosphere of letters, and was deeply interested in the development of educational methods. His alma mater, Bowdoin, recognizing in him an alumnus of sound judgment and practical views, made him an overseer of that institution, a position which he filled with credit up to the time of his death.

With our advent in the World War, his feeling of patriotism transcended all private and personal considerations. Although he was well beyond the draft age, he set an edifying exam-

ple for many of his juniors in the profession by enlisting in the medical corps, in which he was commissioned Captain in April, 1918, and detailed to the Medical Officers Training Camp, Camp Greenleaf, Ga., May 11, 1918. Later he was designated Orthopedic Surgeon, and served in that capacity at various posts until his honorable discharge from the Service in April, 1919.

To the pursuit of his chosen profession Dr. Young brought a mind well stocked with practical knowledge, and in his unassuming way he did much for the alleviation of human wretchedness—often with no other reward than the gratitude of sufferers made whole by operations humanely conceived and skillfully executed.

By Dr. Young's colleagues at the Boston City Hospital his loss will be keenly felt. The senior staff will miss his dignified presence in their professional deliberations, the younger men his unflinching helpfulness and encouragement. He passed, as he had lived, quietly and courageously. In his passing many of us have lost a rare friend, the profession an able and estimable member, the State a splendid citizen.

J. W. COURTNEY.

January 20, 1923.

RECENT DEATH.

DR. CHARLES PIERCE BEAN died in Boston, January 12, 1923, aged 58. He was the son of Dr. Nathan P. and Amanda M. Bean, was a graduate of Bellevue Hospital Medical College in 1891, settled in Boston in 1896, and joined the Massachusetts Medical Society. He was a member of the Boston Fusiliers and of Palestine Commandery Knights Templars, of Belfast, Me.

Miscellany.

NUTRITION ACTIVITIES IN MASSACHUSETTS.

A STUDY made by the State Department of Public Health shows a rapid development of nutrition activities in Massachusetts during the past two years. The cities and towns with home economics classes in their schools have increased from 130 in 1920 to 251 in 1922; the extension classes in nutrition, from 31 to 47; 202 cities and towns have reported hot school lunches, as against 167 two years ago. The underweight children are being taken care of in 45 cities and towns by special nutrition classes, which have been almost tripled within two years. Thirteen cities and towns have added special workers to their nutrition force.

When we consider that 20 per cent. or more of our children are suffering from malnutrition, the importance of immediate measures for build-

ing healthy bodies is manifest. The hot school lunch is necessary where commuting at noon is impossible; the mid-morning lunch of milk is desirable not only for the undernourished child, but also, in most cases, for the well child. The nutrition clinic fills a need for the children who are below par. But we must not forget the home economics class. Its value, though not perhaps immediate, is far-reaching, as it lays the foundation for better food, better health, better homes.—*Commonwealth*, Sept.-Oct., 1922.

REPORT OF MEETING OF BOSTON MEDICAL HISTORY CLUB.

At the third winter meeting held at the Boston Medical Library, January 15, Dr. Isador H. Coriat read a paper on "The Symbolism of the Gold-Headed Cane," the fourth paper in his series on medical symbolism.

He made brief mention of the meaning and symbolism of the wig and ring but devoted chief attention to the gold-headed cane which was always carried by physicians during the seventeenth and eighteenth centuries. He traced the ancestry of the cane or staff back to ancient times, showed its significance and explained the varied symbolism connected with the shape, size, and material used.

Dr. Gardner W. Allen read two letters of Benjamin Franklin (whose birthday, January 17, so nearly coincided with the date of the meeting), one on lead poisoning (1786) showing a wide knowledge and accurate observation of the disease at that time, the other (1773) giving some curious accounts of suspended animation.

Dr. W. P. Coues noted the dearth of accurate medical descriptions in American fiction as compared with English, French or Russian. He spoke briefly of the life of Herman Melville, the American author, and characterized him as a trustworthy observer and writer, whose stories of life at sea had the effect of putting an end to flogging in the Navy. He then read the amusing but carefully described account of a high thigh amputation on shipboard from Melville's "White Jacket," published about 1850.

Mr. James F. Ballard began his series of bibliographic demonstration of texts illustrating the history of medicine, his idea being to take a definite chronological period, to comment briefly on its chief authors and works and to show the texts, actual, photographed, or in translation, together with the best reference books for the period. This scheme was original with Dr. Finlayson of Edinburgh and has never been attempted in this country.

The period covered by the lecture was from prehistoric times down to the early Roman and Greek period. Source books containing illustrations and information on primitive and animal medicine were first discussed and shown. Then in order Sumerian, Egyptian, Hebrew,

Indian, Persian, Chinese and Japanese medicine was taken up with demonstrations of the Hammurabi code, Babylonian clay tablets, Ebers and Smith papyri, the Talmud, works of Susruta, and Charaka the Zend-Avesta, and early Chinese and Japanese works on the measurement of bones, cauterization, inoculation for smallpox, finger prints, acupuncture, osteopathy, massage, etc. After the meeting the members had opportunity to examine the texts, about 40 volumes. These proved to be so interesting that it was decided to keep them together until February 1 at the Medical Library, where they may be examined at leisure by anyone interested. The next meeting will be held on February 19.

UNITED STATES DEPARTMENT OF LABOR, CHILDREN'S BUREAU.

LESS than one in twenty among a group of three thousand children two to seven years of age in Gary, Indiana, whom physicians of the Federal Children's Bureau examined, was found to be free from physical defects. The Bureau's report on "Physical Status of Preschool Children, Gary, Indiana," just issued by the United States Department of Labor, states that about half the children of these ages in the city were given examinations, and that 60.7 per cent. of the group were children of foreign-born white mothers. The exact proportion of children without physical defects was 4.8 per cent., or 149 out of 3125 examined. The children of foreign-born parentage had a few more defects than those of native white parentage and a few less than the colored children.

The most common type of defect found among the Gary children was that including defects of the nose and throat, such as adenoids and enlarged or diseased tonsils. This type occurred in 69 per cent. of all the cases. In spite of the conservative standards which were adopted for recommending removal of tonsils, it was considered by the throat specialist who aided in the study that out of 1626 cases showing defective tonsils, removal was necessary for nearly two-fifths. Diseased tonsils showed steady increase with each year of age.

The most conspicuous single defect was decayed teeth, the percentages increasing from 21.1 per cent. in the two-year-old children to 87.7 in the six-year-olds. The report says that general ignorance was indicated regarding the importance of dental attention for the first teeth. More than one-third of the children tested showed defective sight, and of those needing glasses only 10 per cent. had been aware of the need.

Postural defects due to lack of muscular development, such as round shoulders, curved

spines, prominent shoulder blades, bowlegs, etc., seemed on the whole to bear some relation to underweight, and this was true also for anemia and for bone defects due to rickets, but the large proportion of other common types of defects among children of average weight or above "suggests the importance of periodic physical examination," it is said. The findings also suggest that there may be no definite relation between these other types of defects and underweight, and there is declared to be an apparent need "for further study of the growth of children between two and seven years of age before any approximate standard of deviation from the average weight can be made for children at this age period."

THE INTERNATIONAL CONGRESS OF OPHTHALMOLOGY (1925).

At the International Congress of Ophthalmology held in Washington in April, 1922, Mr. Treacher Collins presented an invitation on behalf of all the Ophthalmological Societies of Great Britain and Ireland to hold the next Congress in London in the year 1925. The invitation was accepted on the motion of Professor Gullstrand, of Upsala, Sweden, seconded by Dr. Lucien Howe, of Buffalo, New York. A general committee consisting of representatives of the inviting Societies has since met and has formed an executive committee, empowered to make arrangements for the 1925 Congress. It is to be held in London during the four days, Tuesday 21st to Friday 24th July. The three official languages are to be English, French and German. The subscription for membership has been fixed at the sum of £2. Invitations will be sent to the principal Ophthalmological Societies or other representative bodies in every nation, asking them each to nominate a delegate to the Congress who would be responsible for promoting its interests in the country which he represents, so as to endeavour to make it a great reunion of all those interested in Ophthalmology throughout the world.

The Executive Committee is composed of the following members: Mr. E. Treacher Collins, Chairman; Mr. J. Herbert Fisher, Vice-Chairman; Mr. Ernest Clarke, Treasurer; Mr. Leslie Paton, 29, Harley Street, London, W., and Mr. R. R. James, 46, Wimpole Street, London, W., Secretaries; Mr. A. B. Cridland; Mr. J. B. Lawford; Mr. Humphrey Neame; Sir John H. Parsons, F.R.S.; Mr. A. H. H. Sinclair.

PASTEUR.

Valéry-Radot quotes Pasteur as saying on one occasion: "A man of science should think of

what will be said of him in the following century, not of the insults or the praise of one day." In commemorating Pasteur's one-hundredth birthday this year, audiences throughout the world will know nothing of the insults, but, in this "following century," will unite in one great wave of praise. He did become a teacher, as his father so ardently wished, not indeed in the college at Arbois, not only in the universities of Strasbourg, Lille, or at the Ecole Normale, but a teacher at whose feet the civilized world still sits in grateful appreciation.—*The Nation*.

LEGISLATIVE MATTERS.

The following bills are to come before the legislature in 1923 for action.

Senate. No. 25. An Act to Provide for the Purchase and Maintenance of Tuberculosis Hospitals and Sanatoria by the Commonwealth. (To accompany the petition of Albert P. Wadleigh and another for the purchase and maintenance by the Commonwealth of county tuberculosis hospitals and sanatoria. State Administration.)

Senate. No. 36. An Act Authorizing the Registration of Clara M. Mitchell as a Chiropodist. (To accompany the petition of Clara M. Mitchell that the Board of Registration in Medicine be authorized to register her as a chiropodist. Public Health.)

House. No. 211. An Act to Require the Constant Attendance of a Physician in Certain Hospitals. (Accompanying the petition of Charles Symonds that in every hospital having a capacity of more than fifty beds there shall be a registered physician in constant attendance. Public Health.)

House. No. 212. An Act Relative to the Qualifications of Applicants for Registration as Qualified Physicians. (Accompanying the petition of Horace D. Arnold relative to the registration of persons as qualified physicians. Public Health.) . . . the board may at its discretion accept the certificate of the National Board of Medical Examiners of the United States, chartered under the laws of the District of Columbia, in place of and as equivalent to its own professional examination.

House. No. 269. An Act Relative to the Rights and Interest of Certain Persons Received and Detained in Hospitals for the Treatment of Mental Diseases. (Accompanying the petition of Roland D. Sawyer relative to the rights and interests of voluntary patients received and detained in hospitals for the treatment of mental diseases. Legal Affairs.)

House. No. 320. On petition of Leverett D.

Holden Relative to the Registration of Births. This provides that the attending physicians shall deliver the notice in place of mailing it.

House. No. 275. On petition of Samuel B. Woodward Requiring Vaccination of Certain Children in Private Schools.

Correspondence.

SPECIAL TOUR TO AMERICAN MEDICAL ASSOCIATION MEETING.

January 15, 1923.

Mr. Editor:

Several weeks ago I sent you a notice of the special tour to the meeting of the American Medical Association, which we are endeavoring to get up, with the request that you publish it in the *Boston Medical and Surgical Journal*. At the same time I stated that the complete itinerary would be sent to you later. I now take pleasure in enclosing this itinerary, which I hope you will publish in the first possible issue of your *JOURNAL*.

Yours very truly,

EDWARD LIVINGSTON HUNT, Secretary,
Medical Society of the State of New York.

AMERICAN MEDICAL ASSOCIATION.

Eastern District.
Official Tour to National Convention, San Francisco, California.

The American Medical Association Convention will be held at San Francisco, Calif., June 25-29, 1923. The sub-committee appointed by the secretaries of the medical societies of the eastern states have arranged for the following twenty-five day tour to San Francisco and return, stopping at interesting and important points. The details and arrangements of the trip will be assumed and handled by an experienced tourist representative, who will accompany the party and take entire charge of the tour.

In order to be assured of special train privileges, it will be necessary to have one hundred and twenty-five or more persons subscribe to the tour.

The committee extend to all who contemplate attending the convention a cordial invitation to join, the details of which follow in proper sequence.

SCHEDULE.

Friday, June 15: Lve. New York, New York Central R. R., 5:30 P.M.; E. S. T.; Arr. Albany, New York Central R. R., 8:55 P.M. Dinner in New York Central dining car.

Lve. Boston, Boston & Albany R. R., 2:10 P.M.; Lve. Worcester, Boston & Albany R. R., 3:25 P.M.; Lve. Springfield, Boston & Albany R. R., 4:45 P.M.; Lve. Pittsfield, Boston & Albany R. R., 6:36 P.M.; Arr. Albany, Boston & Albany R. R., 7:55 P.M. Combine with New York City delegation.

Lve. Albany, New York Central R. R., 9:00 P.M.; Lve. Utica, N. Y. C. R. R., 11:08 P.M.

Saturday, June 16: Lve. Syracuse, New York Central R. R., 12:30 A.M.; Arr. Cleveland, N. Y. C. R. R., 8:20 A.M.; Lve. Cleveland, N. Y. C. R. R., 8:30 A.M.; Lve. Toledo, N. Y. C. R. R., 10:15 A.M.; C. T.; Arr. Chicago, N. Y. C. R. R., 4:00 P.M.

Breakfast and luncheon served in New York Cen

tral dining car; transfer to hotel; dinner provided. Transfer to A. T. & S. F. R. R. Terminal. Leave Chicago, A. T. & S. F. R. R., 8:10 P.M.

Sunday, June 17: Arrive at Kansas City, A. T. & S. F. R. R., 8:55 A.M. Breakfast served in A. T. & S. F. dining car. Two hour and twenty-five minute stop. Automobiles, sight-seeing tour of park and residential section included. Leave Kansas City, A. T. & S. F. R. R., 11:30 A.M. Luncheon and dinner served in A. T. & S. F. R. dining car.

Monday, June 18: Arrive at Denver, A. T. & S. F. R. R., 8:00 A.M. Breakfast served in A. T. & S. F. dining car. At Denver automobiles will be in waiting to convey the party via Ralston and Clear Creek Valleys to the summit of Lookout Mountain. Here a twenty-minute stop is made at the last resting place of the famous old scout Buffalo Bill. Leave Denver, A. T. & S. F. R. R., 1:00 P.M. Luncheon served in A. T. & S. F. dining car. Arrive Colorado Springs, A. T. & S. F. R. R., 3:30 P.M. This is one of the most popular tourist resorts in the United States. Automobiles will meet our party at station for ride through Crystal Park and Garden of the Gods, returning to train. Leave Colorado Springs, A. T. & S. F. R. R., 7:00 P.M. Dinner served in A. T. & S. F. dining car.

Tuesday, June 19th: Arrive at Albuquerque, A. T. & S. F. R. R., 11:00 A.M. Opportunity to visit Harvey Museum. Leave Albuquerque, A. T. & S. F. R. R., 1:00 P.M. Breakfast, luncheon and dinner served in A. T. & S. F. dining car.

Wednesday, June 20: Arrive at Grand Canyon, A. T. & S. F. R. R., 5:00 A.M. The Grand Canyon of Arizona is one of the most stupendous spectacles in nature. Opportunity will be given to descend to the bed of the Colorado River or to ride in comfort around the rim of the Canyon. Breakfast, luncheon and dinner will be served at the El Tovar Hotel. Leave Grand Canyon, A. T. & S. F. R. R., 8:30 P.M.

Thursday, June 21st: Arrive at San Bernardino, A. T. & S. F. R. R., 1:30 P.M. Breakfast and luncheon served in A. T. & S. F. dining car. At San Bernardino automobiles will convey the party via Redlands, Sudley Heights, Mount Rubidoux and Magnolia Avenue to the Mission Inn, Riverside, where dinner will be served. A special organ recital will be given. There will be ample time to enjoy the many attractions at this historic resort. Leave Riverside, A. T. & S. F. R. R., 8:00 P.M. Arrive at Los Angeles, A. T. & S. F. R. R., 9:45 P.M. Passengers and hand baggage will be transferred to Hotel Rosslyn, where lodging will be provided (two persons to each room with bath).

Friday, June 22nd: As the many points of interest will attract the members of the party, meals while in Los Angeles have not been included. Passengers and hand baggage transferred to Southern Pacific R. R. Terminal. Leave Los Angeles, Southern Pacific R. R., 8:00 P.M.

Saturday, June 23rd: Arrive at Merced, Southern Pacific R. R., 7:50 A.M. Breakfast in Southern Pacific dining car. Leave Merced, Yosemite Valley R. R., 8:05 A.M. Arrive at El Portal, Yosemite Valley R. R., 11:45 A.M. Yosemite National Park, located in the foothills of the Sierra Nevada Mountains in California, 4,000 to 9,000 feet above sea level and covering an area of 759,622 acres, embraces so much in nature that one feels that this realm of enchantment was created solely for the purpose to which it is today devoted—for the recreation and enjoyment of mankind.

Schedule of Yosemite Tour: Leave El Portal, by automobile, at 12:40 P.M., arriving at Yosemite Lodge at 1:45 P.M. Automobile tour of upper and lower floors of the valley. Luncheon, dinner and lodging provided at the Yosemite Lodge.

Sunday, June 24th: Breakfast, Yosemite Lodge, at 6:15 A.M. Leave Yosemite Lodge, by automobile, at 7:00 A.M., arriving at Mariposa (Grove of Big Trees),

at 11:00 A.M. Box luncheon at Big Trees Grove. Leave Big Trees, by automobile, at 12:05 P.M., arriving at Glacier Point at 3:45 P.M. Leave Glacier Point, by automobile, at 4:45 P.M., arriving at Yosemite Lodge at 7:30 P.M. Dinner at Yosemite Lodge. Leave Yosemite Lodge, by automobile, at 8:45 P.M., and arriving at El Portal at 9:40 P.M., leaving El Portal, Yosemite Valley R. R., at 10:00 P.M.

Monday, June 25: Arrive at Merced, Yosemite Valley R. R., at 2:00 A.M. Leave Merced, by Southern Pacific R. R., at 2:15 A.M., and arriving at San Francisco (Oakland Pier), at 6:30 A.M.; at Market Street at 7:00 A.M. Passengers, hand baggage and trunks, transferred to hotels. Hotel accommodations while in San Francisco not included.

Monday, June 25, to Friday, June 29th: Attending AMERICAN MEDICAL ASSOCIATION CONVENTION, San Francisco. For those not actively engaged in the work of the convention, there is no city in the Great West where time can be spent more advantageously than in San Francisco. Beautiful Golden Gate Park, the Presidio, Mount Tammepps and Berkeley, with the ever interesting Chinatown, are but a few of the many points of interest which may be visited.

Friday, June 29: Leave San Francisco (Market St. Wharf), Southern Pacific R. R., 10:20 P.M.

Saturday, June 30th: En route, breakfast, luncheon and dinner served in Southern Pacific dining car.

Sunday, July 1st: Arrive at Portland, Southern Pacific R. R., at 7:20 A.M. Breakfast served in Southern Pacific dining car. Portland—Nature has bestowed many of her rarest gifts upon the territory surrounding Portland. This combination of natural and artificial beauty is best exemplified in the Columbia River Highway Drive, which is included in the itinerary at this important stop-over point. Luncheon and dinner served at Hotel Benson. Leave Portland, Union Pacific R. R., at 11:30 P.M.

Monday, July 2nd: Arrive at Seattle, Union Pacific R. R., at 6:30 A.M. Seattle—A short stop will be made in this city. Automobiles will transfer party to the Hotel Washington where breakfast will be served. Short auto tour after breakfast terminating at Canadian Pacific S. S. Wharf where steamer will be boarded for daylight sail across Puget Sound. Leave Seattle, Canadian Pacific S. S. Lines, at 9:00 A.M. Luncheon served on steamer. Arrive at Victoria, Canadian Pacific S. S. Lines, at 1:15 P.M. Victoria—The capital of British Columbia is always of interest to the tourist. A short automobile trip is included in visit, to this picturesque city. Leave Victoria, Canadian Pacific S. S. Lines, at 2:30 P.M. Arrive at Vancouver, Canadian Pacific S. S. Lines, 7:00 P.M. Transfer to Hotel Vancouver, where dinner will be served. Evening in Vancouver. Cars will be parked—retire on train.

Tuesday, July 3rd: Leave Vancouver, Canadian Pacific R. R., at 3:00 A.M. Breakfast, luncheon and dinner served in Canadian Pacific dining car. With the snow-capped peaks of the Canadian Rockies always in view your daylight ride through the Fraser and Thompson River Canyons will prove of unusual interest. Arrive at Revelstoke, Canadian Pacific R. R., at 7:00 P.M.

Wednesday, July 4th: Leave Revelstoke, Canadian Pacific R. R., at 12:01 A.M. Arrive at Lake Louise, Canadian Pacific R. R., at 9:30 A.M. Breakfast served in C. P. R. R. dining car. Passengers transferred to Lake Louise. Luncheon and dinner served at the Chateau Lake Louise. Lake Louise—The Pearl of the Canadian Rockies is one of the "most perfect bits of scenery" in the world. A lake of the most exquisite coloring with sombre forests and cliffs that rise from its shores, the snow-crowned peaks that fill the background, glaciers centuries old, and the superb location of the wonderful Chateau will long linger in your memory. Leave Lake Louise, Canadi-

an Pacific R. R., at 9:25 P.M. Arrive at Banff, Canadian Pacific R. R., at 10:30 P.M. Cars parked—retire on train.

Thursday, July 5th: Passengers transferred to Banff Hot Springs Hotel. Banff—The gateway to the Canadian National Parks is the last of the scenic attractions offered by this route of a "Million Wonders." The famous Hot Springs Hotel, where breakfast, luncheon and dinner will be served, is of unusual interest. The Cascade Mountains to the north—Mount Pechee to the south—with the famous Bowie River at their base, all combine to add color and variety to the wonderful setting of this world renowned tourist resort. Leave Banff, Canadian Pacific R. R., at 10:30 P.M.

Friday, July 6th: En route through the fertile wheat producing sections of Alberta and Saskatchewan. Breakfast, luncheon and dinner served in Canadian Pacific dining cars. Brief stops at Medicine Hat and Moose Jaw.

Saturday, July 7th: Arrive at Winnipeg, Canadian Pacific R. R., at 8:00 A.M. Breakfast served in Canadian Pacific dining car. Winnipeg—Automobile sight-seeing tour covering points of scenic interest which the "Frontier City" so amply provides will be included. Luncheon served at Royal Alexandria Hotel. Leave Winnipeg, Canadian Pacific R. R., at 4:45 P.M. Dinner served in Canadian Pacific dining car.

Sunday, July 8th: Arrive at St. Paul, Soo Line, at 8:00 A.M. Breakfast served in Soo Line dining car. St. Paul—Automobile tour of the "Twin Cities" covering the many attractive points of commercial and scenic interest has been arranged. Luncheon and dinner will be served at the St. Paul Hotel. Leave St. Paul, Chicago & Northwestern R. R., at 8:15 P.M.

Monday, July 9th: Arrive at Chicago, Chicago & Northwestern R. R., at 8:00 A.M. Breakfast served in C. & N. W. dining car. Train transferred to New York Central R. R. Terminal. Leave Chicago, New York Central R. R., at 10:25 A.M. Luncheon and dinner served in N. Y. C. dining car.

Tuesday, July 10th: Arrive at New York, Grand Central Terminal, at 9:22 A.M. Breakfast served in N. Y. C. dining car.

COST OF TOUR.

The following fares include transportation, Pullman accommodations, all meals en route and features at stop-over points as indicated in itinerary:

One person in lower Pullman berth.....	\$457.15
One person in upper Pullman berth.....	437.15
Two persons in Compartment (each).....	491.10
Two persons in Drawing room (each).....	516.15
Three persons in Drawing room (each).....	477.10

RESERVATIONS.

All applicants desirous of joining the tour should communicate with Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., Longacre Building, 1472 Broadway, New York, enclosing the sum of Fifty (\$50.00) dollars for each person, receipt for which will be given and amount applied to total cost of tour. The advance payment will be refunded if for valid reason applicant finds it necessary to abandon tour. Notice to this effect must be given on or before June 15th when final payment is due.

MEMBERSHIP TICKETS.

Membership tickets will be mailed to each member of the party. This ticket will show the assignment of space in sleeping cars and will entitle the bearer to all features included in itinerary.

BAGGAGE ARRANGEMENT.

Each passenger will be allowed 150 pounds of baggage free. Special baggage car will be provided with Baggage Master in charge. Passengers may have access to their baggage at all points en route. Special baggage tags will be furnished each member of tour. Please write on tag, your name, home address, and hotel selected in San Francisco. Trunks, with tags attached, should be forwarded to New York Central Railroad Station, where station baggageman will see that the baggage is placed in the A. M. A. Special baggage car.

As a means of identification, hand baggage should also have a similar tag, securely attached, with name and home address plainly shown.

TRANSPORTATION COMMITTEE.

E. Livingston Hunt, M.D., Chairman, 41 East 63rd Street, New York, N. Y.

Wilbur B. Ward, M.D., 24 West 50th St., New York N. Y.

Malcolm C. Rose, M.D., Knickerbocker Bldg., 152 West 42nd St., New York, N. Y.

TOUR MANAGER.

J. S. McAndrew, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

THE CRUISE OF THE ENDOCRINE.

The ballast is settled, the cargo is packed,
And the sails to the spars have been skillfully tacked
By the crew (who are most of them drapers);
The table is set and the crew have been told
Where the toddy is hidden (in case of a cold),
And they've read, and discarded, their papers.

So it's hey for the open, and ho for the trough
Of a southerly swell, and the Endocrine's off
With a cheer, and all sorts of commotion.
She warps from the harbor and tacks for the bay,
And bumps with the vessels that get in her way,
(Though you'd think there'd be room in the ocean).

Till the captain strides up and he bawls in his
rage,
With profanity awful for him, at his age,
"Can't you see where you're going, you loafers?
Now you've scraped all the paint from my Endocrine's
side;
Can't you steer? Or perhaps you just drift with the
tide,
With your fleet of old broken down sofas."

But the offing is reached where the breezes blow
free,
And the captain, whose name is—but wait—let me
see—
Is it Jones? Is it Smith? Is it Jackson?
Addresses the crew in the waist of the ship
Where the deck is well padded, in case they should
slip,
In a voice like the sob of a klaxon—

"When the voyage is started—be careful—beware
Of the damp of the decks and the dust in the air;
Wear your rubbers, I urge—" he grew paler—
"It's advice that I'd give to my wife, or my son,
Or my mother, who's aged (I've got only one,
But, Land's Sake! that's enough for a sailor)."

"It's advice that I'd give to my aunt, or my nurse, If I had one. I need one," he sobbed with a curse, "But I haven't so much as a daughter To lay out my flannels, to care for my suits. To sew on my buttons, and blacken my boots, And to keep me away from the water."

* * *

With a cargo of shotguns and grapefruit and spice: With tobacco and cartwheels and chocolate ice; With phonograph records and sickles, To trade with the natives of various isles— To charm with their manners and please with their smiles And to tempt with the dillest of pickles,

Was the object avowed by the crew of this craft, Who practised their pranks as they bellowed "Abaft!" And lightning-like leaped to the rigging. But their cruise had an object not mentioned in dock, And the thought of which caused a distinct mental shock, And set their hearts needlessly jiggling—

"Do glands come from England?" they wanted to know, "And do cretins in Crete find the place they can grow With indigenous profit and pleasure? These answers for Science's sake we must learn; For knowledge, not profit, we thirstily yearn." And they quoted from "Osler," for measure.

"By various specialists we have been told That no one need ever again become old If glands are employed with discretion. Injected, or eaten, they work like a charm, And the toxins of age need no longer do harm— Or at least, that's the common impression."

So they sailed and they sailed, these inquisitive tars, And some, when they steered by the compass or stars, Headed vaguely in England's direction, While others, when taking their trick at the wheel, Would beat it for Crete on a fast-flying keel, A doubtful and tactless deflection.

Weeks dragged into months; "Tempus fugit" is true— And of England or Crete they had never a view; Months turned into years on their journey. The young became older, the middle-aged old, And the captain grew aged. (His name I've been told; Was it Brown? Was it Black? Was it Burney?)

The barnacles fattened, the planking grew gray, And the grasses grew longer and longer each day, And the green scum grew thicker and thicker; The rigging grew rotten, and fell from the spars, And the masts, warped and crooked, looked up at the stars, And they laughed, with a cynical flicker.

But still they rolled south, looking vainly for Crete, And then turned, lumbered back, and repeat and repeat. And Time kept on turning the pages. And vessels brought word of a phantom-like boat, Sans sails and sans spars—it was scarcely afloat— That circled about through the ages.

Generations passed by; decades eight, I've been told. When into the harbor a derelict rolled— Came about, decks awash, within hailing And a ninety-year cabin boy stood at the wheel; He was ragged and worn; he was down at the heel, And his whiskers hung over the railing.

He was wild-eyed and seedy; he scarcely could speak;

He was dusty and dirty, rheumatic and weak; Yes, he might have been Noah's twin brother. But he waved us aside and he shuffled his feet, And he squeaked, "Is it England I've spoken, or Crete?"

For it's bound to be one or the other."

JOG.

X-RAY MECHANICIAN.

The United States Civil Service Commission announces an open competitive examination for X-ray mechanician. Receipt of applications to close February 20, 1923. A vacancy in the Veterans Bureau, Washington, D. C., at \$200 a month, and vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

TRANSPORTATION TO SAN FRANCISCO NEXT JUNE.

The American Medical Association will hold its next annual session in San Francisco, June 25 to 30, 1923. Dr. Wendell C. Phillips, of 40 West 47th Street, New York, one of the trustees, is organizing a committee from the Eastern States to arrange for transportation to and from that meeting. He will be glad of the views of the Fellows of the Massachusetts Medical Society as to the sort of tours that would find most favor.

(Signed) Walter L. Burrage, *Secretary*.

NEW ENGLAND PEDIATRIC SOCIETY.

The 78th meeting of the New England Pediatric Society will be held at the Boston Medical Library, February 9, 1923, at 8.15 P. M. It will be a special Yale Night, and all the speakers are from the Pediatric Department of the Yale Medical School. The following papers will be read: (1) The History of the Use of Cod Liver Oil in Rickets; Some of Its Effects in the Organism, Ruth A. Guy, M.D.; (2) A Study of Diets and Living Conditions of Rachitic Children, with a Report of the Earliest Case of Rickets on Record and of Rickets in a Family of Seven Children, Ethel C. Dunham, M.D., Ruth A. Guy, M.D., and Miss Lydia E. Willis; (3) Proof of the Extraordinary Influence of Sunlight and Out-of-Door Air on the Organism, Grover F. Powers, M.D., and Ruth A. Guy, M.D.

OSCAR M. SCHLOSS, M.D., *President*.
LEWIS W. HILL, M.D., *Secretary*.

ENCEPHALITIS.

Sleeping sickness has been prominent in the newspapers ever since the great epidemic of influenza. Every conceivable condition in which coma or delirium has been a symptom has been heralded as a case of sleeping sickness.

There is no question but that of late years cases of encephalitis have been recognized more frequently than formerly. That there is a new disease is not probable. The disease is so rare that few cases are seen by any one practitioner. The result is that perhaps many cases pass without recognition, and, possibly owing to the popular notoriety of the disease, the diagnosis may be wrongly made in certain instances.

The literature on the disease is new and difficult for the busy general practitioner to estimate at its true value. It is a rare privilege, therefore, to be able to hear from so clear a thinker and so able a speaker as Dr. Taylor a review of our knowledge of encephalitis. Not only is he familiar with neuropathology but with the clinical manifestations of nervous diseases.

The causes and methods of transmission of encephalitis, its symptoms, treatment and sequelae, its relations to other infectious diseases of the central nervous system are so important that all who can should attend the meeting at the Boston Medical Library on the evening of January 31, whether or not members of the Suffolk District Society.

THE MASSACHUSETTS MEDICAL SOCIETY.

STATED MEETING OF THE COUNCIL.

A stated meeting of the Council will be held in John Ware Hall, Boston Medical Library, Wednesday, February 7, 1923, at 12 o'clock, noon.

Business:

1. Report of Committee of Arrangements.
2. Report of Committee on Membership and Finance, on Membership.
3. Petitions for restoration to the privileges of fellowship.
4. Appointment of the following delegates:
 - (a) To the Conferences on Health and Public Instruction and Medical Education and Hospitals at Chicago, in March.
 - (b) Two delegates and two alternates to House of Delegates of the American Medical Association for two years from June 1, 1923.
 - (c) Two delegates each to the annual meetings of the following New England state medical societies: Maine, New Hampshire, Connecticut, Rhode Island.
5. Report of Treasurer and Auditing Committee.
6. Report of Committee on Membership and Finance, on Finance, with Budget.
7. Report of Committee on Medical Education and Medical Diplomas.
8. Report of Committee on Meeting of New England State Medical Societies.
9. Incidental Business.

WALTER L. BURRAGE, *Secretary*.

Brookline, January 31, 1923.

Councillors are reminded to sign one of the attendance books before the meeting.

The Cotting Lunch will be served immediately after the meeting.

THE NATIONAL BOARD OF MEDICAL EXAMINERS announces the following dates for its next examinations: Part I: February 12, 13 and 14, 1923. Part II: February 15 and 16, 1923.

The fees for these examinations have been continued at the reduced rate for another year. Applications for these examinations must be forwarded not later than January 1, 1923. Application blanks and circulars of information may be obtained from the Secretary of the National Board, Dr. J. S. Rodman, Medical Arts Building, Philadelphia, Pa.

J. S. RODMAN, *Secretary*.

SOCIETY MEETINGS.

DISTRICT SOCIETIES.

A list of society meetings is herewith published. This list will be changed on information furnished by the secretaries of the societies, and will appear in each issue.

Barnstable District:—Hyannis, February 2, 1923 (Annual Meeting); May 4, 1923.

Bristol South District:—Fall River, May 3, 1923.

Essex North District:—Lawrence, Y. M. C. A. Building (Annual Meeting); May 2, 1923.

Meetings of the Suffolk District and the Boston Medical Library, at the Library:

January 31, 1923—Medical Meeting. "Epidemic Encephalitis," Dr. E. W. Taylor, Boston.

February 28, 1923—Medical Meeting. "Colitis," Dr. Henry F. Hewes, Boston.

March 28, 1923—Surgical Meeting. "A Review of What Surgery Can Accomplish in Diseases of the Thoracic Organs, with a Forecast of the Future," Dr. Howard Lilienthal of New York.

April 25, 1923—Annual Meeting. Election of Officers. "The

Record of the Past Twelve Years in Syphilology, with a Forecast of the Future." A series of 10-minute papers. Dr. C. Morton Smith, Boston, will preside.

The Springfield Academy of Medicine meets the second Tuesday of each month. Schedule of speakers includes the following names: Dr. Alexis Carrel, Dr. W. B. Long, Dr. J. W. Williams, Dr. W. S. Thayer, and Dr. Barton Cooke, Hist. The date for each speaker has not been assigned.

Middlesex North District:—Meeting, Wednesday, January 31, 1923.

Middlesex East District:—
March 21, 1923—Mental Factors in Childhood. Paper by Dr. William Healy.

April 18, 1923—Interpretation of Laboratory Findings. Papers by Dr. E. G. Crabtree and one to be announced later.

May 9, 1923—Annual Meeting.
All meetings except the Annual Meeting will be held at the Harvard Club in Boston. A. E. Small, Secretary.

Worcester District meetings are scheduled as follows:
February 14, 1923—The meeting will be held at the Worcester City Hospital at 4.15 P. M. The program will consist of a series of papers by members of the staff.

March 14, 1923—The meeting will be held at St. Vincent's Hospital at 8.15 P. M. The program will consist of a series of papers by members of the staff.

April 11, 1923—The meeting will be held at Memorial Hospital at 8.15 P. M., and the program will consist of a series of papers by members of the staff.

May 9, 1923—Annual Meeting and banquet.

STATE, INTERSTATE AND NATIONAL SOCIETIES.

NEW ENGLAND PEDIATRIC SOCIETY:—The following are the dates for meetings the coming season. Each meeting is on the second Friday of the month at the Boston Medical Library: February 9, March 9, April 13 and May 11.

January, 1923—Massachusetts Society of Examining Physicians (date and place undecided); Hilbert F. Day, Secretary. Massachusetts Association of Boards of Health, January 25, Annual Meeting, Boston; W. H. Allen, Mansfield, Mass., Secretary.

February, 1923—New England Dermatological Society Meeting, February 14, 1923, at 3.30 P. M., in the Skin Out-Patient Department, Massachusetts General Hospital; C. Guy Lane, Secretary.

February, 1923—Boston Medical History Club will meet the third Monday of this month.

March, 1923—Massachusetts Society of Examining Physicians (date and place undecided); Hilbert F. Day, Secretary.

March, 1923—Boston Association of Cardiac Clinics. Meeting March 15, 1923, at 8.15 P. M., Boston City Hospital. Subject: Prevention and Relief of Heart Failure.

March, 1923—Boston Medical History Club will meet the third Monday of this month.

April, 1923—New England Dermatological Society meeting, April 11, 1923, at 3.30 P. M., in the Surgical Amphitheatre, Boston City Hospital; C. Guy Lane, Secretary. Massachusetts Association of Boards of Health, April 26, 1923, Boston; W. H. Allen, Mansfield, Mass., Secretary.

April, 1923—Boston Medical History Club will meet the third Monday of this month.

May, 1923—Massachusetts Society of Examining Physicians (date and place undecided). American Pediatric Society meeting, May 31, June 1 and 2, 1923, at French Lick Springs Hotel, French Lick, Ind.; H. C. Carpenter, Secretary.

May, 1923—Boston Association of Cardiac Clinics. Meeting May 17, 1923, at 8.15 P. M., Children's Hospital. Subject: Rheumatism and Chorea and Heart Disease.

June, 1923—American Medical Association, San Francisco, June 25-29, 1923; Alexander R. Craig, Chicago, Ill., Secretary.

July, 1923—Massachusetts Association of Boards of Health, July 26, Nantasket; W. H. Allen, Mansfield, Mass., Secretary.

*Deceased September 2, 1922.

THE DANGERS OF VERONAL.

A suspicion exists that the use of veronal has dangerous possibilities. This drug is very generally used at the present time. The testimony of physicians will be of value in determining how far the use of veronal should be restricted. Physicians are hereby asked to submit evidence bearing on this matter to the BOSTON MEDICAL AND SURGICAL JOURNAL. The testimony will be referred to the persons who are engaged in a study of the problems involved. Prompt action is desired.